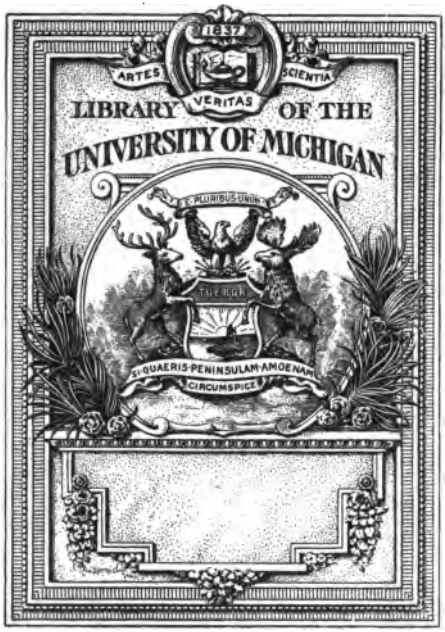

Will this be added to "X" list?
I do not find the list at my desk.
BAY

I have put them on
my list of colleges
M. A. F.

AUCKLAND

University College

(UNIVERSITY OF NEW ZEALAND).

CALENDAR

FOR THE YEAR 1896.

Auckland:
PRINTED FOR THE UNIVERSITY COLLEGE.

MDCCCXCVI.

Auckland:
PRINTED BY WM. MCCULLOUGH, HIGH STREET.

1896.

III.

Auckland University College.

Visitor:

THE HONORABLE THE MINISTER OF EDUCATION.

Council:

CHAIRMAN—SIR GEORGE MAURICE O'RORKE, B.A., M.H.R. (C. 1)

THE MAYOR OF AUCKLAND, JAMES JOB HOLLAND, ESQ.*

THE CHAIRMAN OF THE AUCKLAND BOARD OF EDUCATION, RICHARD UDY, ESQ.*

THE MOST REVEREND WILLIAM GARDEN COWIE, D.D. (B. 1)

JACKSON PALMER, ESQ (B. 3)

THE REVEREND WILLIAM JAMES WILLIAMS (A. 2)

GERALD LOFTUS PEACOCKE, ESQ. (A. 1)

FREDERICK EHRENFRIED BAUME, ESQ. LL.B. (C. 2)

THE HONORABLE JOSEPH AUGUSTUS TOLE, B.A., LL.B. (B. 2)

ROBERT HALL, ESQ, (A. 3)

JAMES SCOTT MACLAURIN, ESQ. B.Sc. (C. 3)

Registrar:

DAVID WILLIAMSON RUNCIMAN, M.A.

* *Ex officio.*

A. Appointed by the Governor in Council.

B. Elected by the Members of the General Assembly resident in the Provincial District of Auckland.

C. Elected by Graduates.

1. Until May, 1896.
2. Until May, 1897.
3. Until May, 1898.

Professors and Lecturers.

Professors:

Classics.

HENRY ARNOLD TUBBS, M.A. Oxford; sometime Craven Fellow, and Arnold Historical Prizeman.

English.

CHARLES WILLIAM EGERTON, M.A. Dublin; Senior Moderator and Gold Medallist, 1885; Vice-Chancellor's Prizeman in English Prose Composition.

Mathematics and Mathematical Physics.

HUGH WILLIAM SEGAR, M.A. Cambridge; Second Wrangler, 1890; Smith's Prizeman, 1892.

Chemistry and Experimental Physics.

FREDERICK DOUGLAS BROWN, ON. M.A. Oxford, B.Sc. London, F.C.S.

Biology and Geology.

ALGERNON PHILLIPS WITHIEL THOMAS, M.A. Oxford, F.L.S., F.G.S.; Burdett-Coutts University Scholar.

Lecturers:

Music.

CARL GUSTAV SCHMITT, Professore Onorario della Scuola Dantesca Napolitana; Knight Commander Order Crown of Italy; Medallist of the South German Orchestral Competition; late Music Director, Kœnigsburg; Galileian Medallist, University of Florence.

French.

JOSEPH WLADISLAS EDMOND POTOCKI DE MONTALK, B. ès L., Paris.

Contents.

—o—

AUCKLAND UNIVERSITY COLLEGE CALENDAR—1896.

JANUARY, XXXI.		
1	W	
2	TH	
3	F	
4	S	
5	**S**	
6	M	
7	TU	
8	W	
9	TH	
10	F	Convocation meets at Christchurch.
11	S	
12	**S**	
13	M	
14	TU	
15	W	
16	TH	
17	F	
18	S	
19	**S**	
20	M	Council meets.
21	TU	
22	W	
23	TH	
24	F	
25	S	
26	**S**	
27	M	
28	TU	
29	W	
30	TH	
31	F	

FEBRUARY, XXIX.

1	S	
2	S	
3	M	
4	Tu	
5	W	
6	Th	
7	F	
8	S	
9	S	
10	M	
11	Tu	
12	W	
13	Th	
14	F	
15	S	
16	S	
17	M	Council meets.
18	Tu	
19	W	First meeting of College Council, 1883.
20	Th	
21	F	
22	S	
23	S	
24	M	
25	Tu	
26	W	Senate meets at Wellington. Applications for
27	Th	*ad eundum* degrees not received after this
28	F	date.
29	S	

MARCH, XXXI.

1	S	Subject of Bowen Prize Essay given out during
2	M	First Term begins. [this month.
3	Tu	
4	W	
5	Th	
6	F	
7	S	
8	S	
9	M	
10	Tu	
11	W	
12	Th	
13	F	Professorial Board meets.
14	S	
15	S	
16	M	Council meets.
17	Tu	
18	W	
19	Th	
20	F	
21	S	
22	S	
23	M	
24	Tu	
25	W	
26	Th	
27	F	
28	S	
29	S	
30	M	
31	Tu	

APRIL, XXX.

1	W	
2	TH	
3	F	
4	S	
5	S	
6	M	Candidates' notices for Honours, for M.A., and
7	TU	Easter] for B.Mus. Examinations, and for all
8	W	Engineering Examinations except the
9	TH	first, 1896, not received after this date:
10	F	the fee may be paid up to May 1st, or a
11	S	*treble* fee up to May 8th.
12	S	
13	M	
14	TU	
15	W	
16	TH	
17	F	**Professorial Board meets.**
18	S	
19	S	
20	M	**Council meets.**
21	TU	
22	W	
23	TH	
24	F	
25	S	
26	S	
27	M	
28	TU	
29	W	
30	TH	

MAY, XXXI.

1	F	
2	S	
3	S	
4	M	
5	Tu	
6	W	
7	Th	
8	F	
9	S	First Term ends.
10	S	
11	M	
12	Tu	
13	W	
14	Th	
15	F	
16	S	
17	S	
18	M	Council meets.
19	Tu	University College opened by His Excellency
20	W	the Governor, 1883.
21	Th	
22	F	
23	S	
24	S	Queen's Birthday.
25	M	
26	Tu	
27	W	
28	Th	
29	F	
30	S	
31	S	

JUNE, XXX.		
1	M	Second Term begins.
2	Tu	
3	W	
4	Th	
5	F	
6	S	
7	S	Canterbury College buildings opened 1877.
8	M	
9	Tu	
10	W	
11	Th	
12	F	Professorial Board meets.
13	S	
14	S	
15	M	Council meets.
16	Tu	
17	W	
18	Th	
19	F	
20	S	
21	S	
22	M	
23	Tu	
24	W	
25	Th	
26	F	
27	S	
28	S	
29	M	
30	Tu	

JULY, XXXI.		
1	W	
2	TH	
3	F	Otago University's First Session opened, 1871.
4	S	
5	S	
6	M	
7	TU	
8	W	
9	TH	
10	F	
11	S	
12	S	
13	M	
14	TU	
15	W	
16	TH	
17	F	Professorial Board meets.
18	S	Canterbury School of Agriculture opened, 1880.
19	S	
20	M	Council meets.
21	TU	
22	W	
23	TH	
24	F	
25	S	
26	S	
27	M	
28	TU	
29	W	
30	TH	
31	F	

AUGUST, XXXI.

1	S	
2	**S**	
3	M	
4	Tu	
5	W	
6	Th	
7	F	
8	S	
9	**S**	
10	M	Second Term ends.
11	Tu	
12	W	
13	Th	Undergraduates exempted under Statute "Terms and Lectures" must give notice by the 15th to the College Registrar of their intention to come up for Annual Examination.
14	F	
15	S	
16	**S**	
17	M	Council meets.
18	Tu	
19	W	
20	Th	
21	F	
22	S	
23	**S**	
24	M	
25	Tu	
26	W	
27	Th	
28	F	
29	S	"New Zealand University Act, 1874."
30	**S**	
31	M	

SEPTEMBER, XXX.		
1	TU	
2	W	
3	TH	
4	F	
5	S	
6	S	
7	M	Third Term begins.
8	TU	
9	W	"New Zealand University Act, 1870."
10	TH	
11	F	
12	S	"Auckland University College Act, 1882."
13	S	
14	M	
15	TU	
16	W	
17	TH	
18	F	Professorial Board meets.
19	S	
20	S	
21	M	Council meets.
22	TU	
23	W	
24	TH	
25	F	
26	S	
27	S	
28	M	
29	TU	
30	W	

OCTOBER, XXXI.

1	TH	Last day of receiving notices for Annual Examinations from Students who have attended Lectures.
2	F	
3	S	
4	**S**	
5	M	
6	TU	
7	W	
8	TH	
9	F	
10	S	
11	**S**	
12	M	
13	TU	
14	W	
15	TH	
16	F	Professorial Board meets.
17	S	
18	**S**	
19	M	Council meets.
20	TU	
21	W	
22	TH	Candidates for December University Examinations, and for Medical Professional Examinations, must send in notices and fees to the University Registrar by 24th; or with *treble* fee up to October 31st.
23	F	
24	S	
25	**S**	
26	M	
27	TU	
28	W	
29	TH	
30	F	
31	S	

NOVEMBER, XXX.

1	S	
2	M	
3	Tu	
4	W	
5	Th	
6	F	
7	S	
8	S	
9	M	Prince of Wales' Birthday.
10	Tu	Third Term ends.
11	W	
12	Th	
13	F	
14	S	
15	S	
16	M	Council meets.
17	Tu	
18	W	
19	Th	
20	F	
21	S	
22	S	
23	M	
24	Tu	
25	W	
26	Th	
27	F	
28	S	
29	S	
30	M	

DECEMBER, XXXI.

1	Tu	Bowen Prize Essays must be sent to the University Registrar during this month.
2	W	
3	Th	
4	F	
5	S	
6	**S**	
7	M	
8	Tu	
9	W	
10	Th	
11	F	
12	S	
13	**S**	
14	M	
15	Tu	
16	W	
17	Th	
18	F	
19	S	
20	**S**	
21	M	Council meets.
22	Tu	
23	W	
24	Th	
25	F	Christmas.
26	S	
27	**S**	
28	M	
29	Tu	
30	W	
31	Th	

Auckland University College.

HISTORICAL SKETCH.

The introduction of University Education into New Zealand was effected by the Superintendent and Provincial Council of Otago, who, in 1869, passed an Ordinance under which the University of Otago was established. Following closely on the founding of this institution was the establishment of the University of New Zealand under an Act of the General Assembly, "The New Zealand University Act, 1870." This University subsequently received a Royal Charter, whereby the Degrees which it confers are declared entitled to "rank, precedence, and consideration" throughout the British Empire, "as fully as if the said Degrees had been conferred by any University of the United Kingdom." It was apparently contemplated by Parliament (*vide* section 19 of the Act last quoted) that the New Zealand University and the Otago University should be amalgamated; but the negotiations for this purpose having failed, the two institutions remained for some time distinct bodies. In the year 1874, however, the University of Otago surrendered or put in abeyance its power of conferring Degrees, and became affiliated to the University of New Zealand; and at the same time it was stipulated that the University of New Zealand should not directly exercise functions of teaching.

In the year 1873 the Superintendent and Provincial Council of Canterbury passed an Ordinance for founding "The Canterbury College;" and the Council was accordingly established with the same standard of University education as that of the University of Otago, but without the power of conferring Degrees.

In December, 1878, a Royal Commission on University and Secondary Education was appointed by the Governor of New Zealand. This Commission, of which Sir George Maurice O'Rorke was Chairman, met in January, 1879, and on the 9th

of July following reported that two Colleges, with an income of £4,000 each, ought to be established in Auckland and Wellington, and that suitable buildings, at a cost of £12,500 each, should be erected in those cities. In the following year the Royal Commission repeated these recommendations.

"The Auckland University College Act, 1882," which became law on the 13th of September in that year, definitely established the College, and endowed it with a statutory grant of £4,000 per annum. By "The Auckland University College Reserves Act, 1885," three blocks of land, containing about 10,000 acres each, and a block containing about 354 acres, which has been devoted to the purpose of promoting higher education in the Province of Auckland, became vested in the Council of University College.

The Auckland University College was affiliated to the University of New Zealand, by the Senate of the University, on the 6th of March, 1883; and on the 21st of May in the same year the College was opened by His Excellency the Governor of New Zealand, Sir William F. Drummond Jervois, G.C.M.G.

The recommendation made by the Royal Commission that College buildings should be erected, has not been carried into effect. The building in Eden Street, which was formerly the District Courthouse, was in 1883 placed at the disposal of the College Council by the Government, for the purposes of the College work. The large room of this building is formed into a lecture-hall, and additions have been made for the formation of laboratories. In "The Special Powers and Contracts Act, 1885," the Governor was empowered, when the offices then occupied by the Survey and Crown Lands Departments in Auckland should be vacated, to transfer those as well as the District Courthouse mentioned above, to the College Council. The block of land on which these buildings stand extends from Parliament Street to Beach Road, containing an area of 1 acre 11 perches. This transfer was carried into effect in the year 1890; and by an expenditure of about £1,200 the premises have been rendered fairly suitable to the purposes of the College.

The Governing Body of the College is constituted and incorporated by the Act of 1882, and is styled "The Auckland University College Council." It consists of eleven members,

two of whom are *ex officio*, viz., the Mayor of the city of Auckland and the Chairman of the Auckland Board of Education. The other nine form three groups, consisting of three members each, viz., three elected by the members of the General Assembly resident in the Provincial District of Auckland, three appointed by the Governor in Council, and three elected by the Graduates of the New Zealand University on the books of the College. These last three members were appointed by the Governor in Council, until the College numbered thirty Graduates. Elections were made by the Graduates for the first time in 1890. One member of each group retires annually. The Minister of Education is the Visitor of the College. The Chairman of the Council is elected by the Council. The Council meets statedly at least once a month, five members forming a quorum. "The Professorial Board," which is constituted by the Act, possesses, "subject to the approval of the Council," the power of fixing the course of study and the days and hours of lectures and examinations, and prescribing the subjects of examination for scholarships, exhibitions, and prizes; and it has, "subject to a right of appeal to the Council," a general control over the discipline of the students, the management of the library, and the direction of the College servants. It elects a Chairman annually. Each Professor or Lecturer is entitled to receive, in addition to his salary, the fees that are paid by students for attendance at his lectures.

Mr. Thomas Bannatyne Gillies, a Judge of the Supreme Court of New Zealand, presented to the College Council, in the year 1884, the sum of £3,000 (three thousand pounds), for the purpose of founding two Science Scholarships, to be called respectively the "Sinclair" and the "Gillies" Scholarship. They were so named in memory of Dr. Andrew Sinclair, uncle of the late Mrs. Gillies, and in memory of Mrs. Gillies herself. This munificent gift was forthwith utilised in the manner prescribed; but these Scholarships had to be put in abeyance since 1888, in consequence of the falling off in the income derived from the land in which the money was invested, until the present year, when the state of the funds warranted the Council to offer for competition in November last a Sinclair and a Gillies Scholarship, each of the value of £50 per annum, tenable for three years.

The Auckland Amateur Opera Club, in the year 1890, pre-

sented to the College Council the sum of two hundred guineas to be expended in that and the two following years for the encouragement of the study of music. Money Exhibitions, accordingly, were granted, to be competed for by students attending, or about to attend, the classes of the School of Music in the College The results were considered to be very satisfactory, but the Exhibitions no longer exist. The Countess of Onslow, in 1891, gave two silver medals to be awarded to the most deserving of those students in the Music classes whom the Regulations excluded from competing for Exhibitions. Similar gifts were made for the years 1892, 1893, 1894, but they are now discontinued.

On the 21st May, 1894, Lady Glasgow signified her intention of offering similar medals for three years, 1895, 1896, 1897, to the Students of Music, to take the place of the Countess of Onslow's medals, which were about to terminate.

A valuable addition was made to the College Library on the 31st March, 1894, by the late Professor Charles Alexander Maclean Pond, who had held the chair of Classics and English from July, 1891, to October, 1893. The whole of his library, consisting of upwards of a thousand volumes, of Standard English and Classical works, he bequeathed to the University College, and the books are now placed in a special press in the Library, each book being labelled as the bequest of the lamented Professor.

The Council is under a great obligation to Mr. James McCosh Clark, who was Mayor of the City of Auckland, during the years 1881, 1882, and 1883, and who, on the termination of his Mayoralty, was presented with a six-inch telescope, by the citizens of Auckland as an appreciation of his public service and as a mark of the citizen's respect and esteem for Mrs. Clark during her husband's Mayoralty. The use of this telescope has been placed at the service of the College, and it is now being mounted at the top of the brick tower attached to the College building. The thanks of the College were tendered to Mr. and Mrs. Clark, for granting the use of the telescope to the College, by resolution unanimously passed by the Council on the 20th December, 1894.

College Regulations.

1. There shall be in each year three Terms. The first Term shall begin on the first Monday in March, and end on the tenth of May. The Second Term shall begin on the first Monday of June, and end on the tenth of August. The Third Term shall begin on the first Monday in September, and end on the tenth of November.

2. The fees for lectures shall be ten shillings per Term for a course occupying one hour per week, one pound per term for a course occupying two hours per week, and so on proportionally. For laboratory instruction the fees shall be ten shillings per term for one half-day per week, one pound per term for two half-days per week, and so on proportionally. Provided that attendance at a course of lectures during the First and Second Terms shall entitle to exemption from payment of fee for attendance at a course of lectures on the same subject and not occupying a greater amount of time per week during the Third Term; and similarly as to attendance in laboratory.

3. On payment of the fee at the office of the College a card of admission shall be issued, which must be countersigned by the Professor or Lecturer. No student is entitled to attend at lectures or in laboratory until he shall have complied with this regulation. The first lecture, however, of every course will be free.

4. Admission to lectures or laboratory shall not be restricted to matriculated students, but shall be available to all persons who have paid the prescribed fees.

5. Every student who shall have attended a course of lectures or laboratory instruction during at least two Terms of the year shall be entitled to be examined at the Annual Examination in the subject of that course without payment of any examination fee

6. Each Professor and Lecturer shall keep a roll showing

the number and names of the students present at each lecture. These rolls shall be laid on the table at each meeting of the Council, and shall be collected by the Registrar at the end of each Term and preserved for reference.

7. Every student shall be deemed to have kept the Terms of the year, who shall have attended during the year at least three-fourths of the prescribed Lectures in each of three subjects specified in the following list of subjects, and shall have passed the Annual Examination in any three such subjects :—

1. Latin
2. Greek
3. English
4. French or German
5. General History and Political Economy
6. Jurisprudence and Constitutional History
7. Pure Mathematics
8. Applied Mathematics
9. Physical Science
10. Chemistry
11. Biology
12. Geology
13. Mental Science
14. Music

8. Students exempted by University Statute from attendance at lectures shall be entitled to be accredited with having kept the Terms of the Year by passing in any three of the subjects above specified.

9. Any student who shall have passed the First Section of the University Examinations for the Degree of Bachelor of Arts or for the Degree of Bachelor of Science in four subjects shall not be required to keep Terms in more than two of the subjects above specified.

10. Attendance at one of the College Laboratories during three hours per week, together with subsequent passing of the Annual Examination in the practice of the corresponding science, shall count as a subject towards the keeping of Terms, but the theoretical and practical examinations shall not count as two subjects in any one year.

11. No student who at the Annual Examinations shall have passed in any subject, and shall have counted such subject towards the keeping of Terms in each of two years, shall be allowed to count the same subject for keeping a third year's Terms except in Honours.

12. As soon as practicable after the Annual Examination there shall be published a list of those persons who have kept the Terms of the year, and also lists of those who have passed the examinations in the several subjects respectively. In each subject there shall be three Classes, the First Class being the highest; but in each Class the names shall be placed in alphabetic order.

13. The Annual Examination shall be held in the last part of the Third Term, at such time approved by the Council, as will allow the publication of the complete results by the last day of the Term.

14. A fee of one guinea shall be paid for the Annual Examination in each subject which the candidate shall select, and on which he shall not have attended lectures. Students who are examined out of Auckland are required to pay an extra 10s. 6d. for each subject on which they are examined, to be paid to the Registrar at least 10 days before the commencement of the examination.

15. Notices for the Annual Examination from students who

shall have attended lectures during the year, shall be delivered to the Registrar not later than the first day of October.*

PREMIUMS.

16. There shall be awarded, after the Annual Examination, seven Premiums of the value of three guineas each, consisting of books or scientific intruments, in the following subjects:—

Classics

English

Mathematics

Chemistry

Physics

Biology

Geology

17. The prizes shall be severally awarded on the recommendation of the examining Professor to students who shall have been in the respective classes not more than two years, and who shall have exhibited sufficient merit.

18. Each prize-winner shall be allowed to select, subject to the approval of the Examiner, the books or scientific instruments to be received as a Premium; and if the cost exceed three guineas, the excess shall be defrayed by the student.

19. Each prize volume shall be well bound and stamped with the College Arms, and shall be distinctively labelled according to the subject in which it shall be awarded. Each scientific instrument awarded shall bear a suitable inscription.

*As to students exempt from attendance at lectures see University Statutes "Terms and Lectures," Section III., University Calendar.

20. If a student wins any of the above prizes in his or her First Year, such student will not be allowed to win that prize or prizes in the Second Year, but may compete for a prize of a different denomination.

PRIZES IN EARLY ENGLISH.

21. The Early English Text Society have offered for competition each year certain volumes of their publications. These books will be awarded on the results of an examination to be held early in the Third Term by the Professor of English Language and Literature. Students are required to notify to the Registrar their intention of competing for these prizes before the end of the Second Term.*

REGULATIONS RESPECTING THE GLASGOW MEDALS.

22. A Glasgow Silver Medal is offered for competition to the students of Music of the Senior Division, and will be awarded to the student who shall be classed as first at the Annual Examination in Music at the end of the session of 1896.

23. A Glasgow Silver Medal is offered for competition to the students of Music of the Junior Division, and will be awarded to the student who shall be classed as first at the Annual Examination in Music at the end of the session of 1896.

24. Students who have won either a Senior Glasgow Medal or a Junior Glasgow Medal shall not be allowed to compete again for a Medal of the same denomination; but the winner of a Junior Medal may compete for a Senior Medal. Students who have obtained a certificate of proficiency in one of the College Classes will not be allowed to compete for a Glasgow Medal in that class or in a lower class.

*For course see Syllabus.

REGULATIONS RESPECTING THE COLLEGE LIBRARY.

25. The Library shall be open every day during Term from 10 a.m. until 8 p.m., except Saturday, when it shall be closed at 1 p.m.

26. A catalogue of the books shall be kept on the table.

27. No person shall make any mark in or upon any book, or fold down a leaf, or otherwise deface any book belonging to the Library. No one shall lay the paper on which he is writing on the book he is using.

28. No person except a member of the Auckland University College, unless he be a student attending lectures, shall be permitted to use the Library.

29. All books, except such as may be specially reserved, may be taken out of the Library; but no person shall have in his possession more than two volumes at a time. Nor shall he retain a book for a longer period than seven days.

30. Text-books prescribed for the current year shall in no case be removed from the Library.

31. Before removing a volume the borrower shall enter in a book to be kept in the Library, his name, the title of the volume and the date of removal. He shall be responsible for its safe return, or in the event of damage or loss, shall be liable to replace it at his own cost.

32. A Notice-book shall be provided in the Library, in which a student desirious of obtaining a book already in circulation may enter his name and the title of the book desired. No person on returning a volume to the Library shall borrow it for a second period, unless he shall have satisfied himself by reference to the Notice-book that the volume is not otherwise required.

SCHOOL OF MUSIC.

A Certificate has been instituted by the Council entitling the holder to rank and be called an "Associate" in the School of Music of the Auckland University College.

Regulations.

1. Candidates for this Certificate must attend a course of Lectures on Acoustics, and pass an examination in the same.

2. They must also give two years attendance on Lectures in the School of Music, embracing the Theory of Music, Harmony, Composition, Form, Counterpoint, Fugue, History of Music, and Instrumentation, and must also display the required proficiency in the execution of either vocal or instrumental Music of standard examples of classical and modern compositions.

3. Notwithstanding the fulfilment of all other requirements, no person shall be entitled to receive such Certificate or be called an "Associate" until he or she shall have attained the full age of seventeen years.

SINCLAIR AND GILLIES SCHOLARSHIPS.

A Sinclair Scholarship is to be offered for competition at the end of October, 1896.

The Examinations are to be held at Auckland, Wellington, Christchurch, and Dunedin.

Candidates are required to give in their names on or before 1st October, to the Registrar, from whom further information may be obtained.

The present holder of the Gillies Scholarship is entitled to retain the same until the end of 1898, so that next competition may be expected to take place in October or November, 1898.

Regulations.

1. The Sinclair and Gillies Scholarships are each at present of the annual value of £50 (fifty pounds), and are tenable for three years. The Sinclair Scholarship has been founded for the encouragement of the study of Biological Science, and the Gillies Scholarship for the encouragement of the study of Chemistry and Physics.

2. These Scholarships are open to all persons, male or female, born in the Colony of New Zealand, who at the time of examination shall be between the ages of sixteen and twenty years, and who shall satisfy the Council of the College that neither they nor their parents or guardians can obtain for them a University education without pecuniary aid.

3. Candidates, when giving notice of intention to compete, sh uld f·rward (1) certificate of birthplace and age, and (2) a declaration to the following effect:—

> I, A——— B———, do solemnly and sincerely declare, that neither I nor my parents or guardians can afford the expense of a University education for me without pecuniary assistance, and that I desire to obtain such an education.
>
> (Signed) A——— B———.
>
> Declared before me this day of 189
>
> (To be signed by a J.P. or Clergyman.)

4. Candidates for the Sinclair Scholarship will be examined in the following subjects:—

> 1. Mathematics; 2. Physical Geography; 3. Animal Physiology; 4. Botany.

Candidates for the Gillies Scholarship will be examined in the following subjects:—

> 1. Mathematics; 2. Elementary Mechanics of Solids and Fluids; 3. Chemistry; 4. Electricity and Magnetism.

The standard of the Examination will be the same as that for the Junior Scholarships of the University of New Zealand.

Special weight will be given to attainments and capacity in Animal Physiology and Botany for the Sinclair Scholarship, and in Chemistry and Electricity for the Gillies Scholarship.

5. The examiners shall be entitled to certify to the Council that no sufficiently qualified candidate has appeared, whereupon the Council may decline to award the Scholarships or either of them.

6. The successful candidate will be required to keep terms at the Auckland University College, and to carry on the studies for the encouragement of which the respective Scholarships were founded.

7. The holder of each Scholarship shall be entitled to payment of a proportionate amount of his Scholarship at the end of each collegiate Term on production of a certificate, from the Professors under whom he shall have studied, of diligent attendance, good conduct, and satisfactory progress in studies. Failing such certificate, or on an adverse report from the Professors, the Council may cancel the Scholarship.

Annual Examination.

After the Annual Examination held in October and November, 1895, the following Students were accredited with having kept the terms of the year :—

Allen, Richard William
Baker, Harold Napier
Bell, Fanny Madeleine
Crump, Mabel Lilian
Cumming, Annie Sophia
Drew, Gertrude Annie
Drummond, Peter
Field, Charles William
Gibson, Marian Alford Morgan
Goldstein, Herbert Meyer
Hei, Hamiora
Harron, Patrick Arthur
Hosking, Winifred Christiana
Innes, Joseph Langlands
Jackson, Thornton
Johnston, James Harvey
Low, David Walker
Macdiarmid, Campbell Larnach
McKenzie, Norman Roderick
Maclaurin, Kenneth Campbell
McPherson, Annie Eliza
Mays, Selwyn
O'Dea, Patrick
Riley, Eveline Charlotte
Smith, Claire Scott
Speight, William Arthur
Strong, Edward Herbert
Watts, Percy Harold
Whitelaw, James Peddie
Williams, Harold Whitmore
Wilson, Henry B.

ANNUAL EXAMINATION.

The Students who passed in the several subjects at the Annual Examination of the year 1895 were classified as follows:—

LATIN.

Class I.

Drummond, Peter
Gibson, Marian Alford Morgan
McPherson, Annie Eliza
Watts, Percy Harold
Whitelaw, James Peddie.

Class II.

Allen, Richard William
Baker, Harold Napier
Cumming, Annie Sophia
Drew, Gertrude Annie
Harron, Patrick Arthur
Macdiarmid, Campbell Larnach
Mays, Selwyn
Strong, Edward Herbert
Wilson, Henry B.

Class III.

Adams, Russell Gerald William
Carson-Dunning, Alexander
Hei, Hamiora
Hosking, Winifred Christiana
Innes, Joseph Langlands
Jackson, Thornton
Maginnity, Arthur Charles.

ENGLISH.

Class I.

Drummond, Peter
Maclaurin, Kenneth Campbell

McPherson, Annie Eliza
Rees, Annie Lee
Williams, Harold Whitmore.

Class II.

Low, David Walker
Mays, Selwyn
Macdiarmid, Campbell Larnach
O'Dea, Patrick
Watts, Percy Harold.

Class III.

Blackman, Harold
Carson-Dunning, Alexander
Harron, Patrick Arthur
Hei, Hamiora
Innes, Joseph Langlands
Jackson, Thornton
Prowse, Woodley Armstrong
Smith, Harry
Strong, Edward Herbert
Wilson, Henry B.

FRENCH.

Senior (Pass)

Class I.

Field, Charles William
De Montalk, Judith J.

Class II.

Gibson, Marian Alford Morgan.

Class III.

Drew, Gertrude Annie
Strong, Edward Herbert.

ANNUAL EXAMINATION.

JUNIOR.

CLASS I.

FRASER, Lucy McKenzie.

CLASS II.

CUMMING, Annie Sophia
HOSKING, Winifred Christiana
PEACOCKE, Florence Lilian.

CLASS III.

HOSKING, Blanche Beatrice.

GERMAN.

CLASS I.

WILLIAMS, Harold Whitmore.

HISTORY AND POLITICAL ECONOMY.

CLASS I.

MACLAURIN, Kenneth Campbell
O'DEA, Patrick
REES, Annie Lee.

CLASS II.

LOW, David Walker
MCKENZIE, Norman Roderick
RILEY, Eveline Charlotte
SMITH, Harry
SPEIGHT, William Arthur
WILLIAMS, Harold Whitmore
WILSON, Henry B.

Class III.

Blackman, Harold
Harron, Patrick Arthur
Innes, Joseph Langlands
Johnston, James Harvey.

PASS MATHEMATICS

Class I.

Allen, Richard William
Baker, Harold Napier
Smith, Claire Scott
Speight, William Arthur
Watts, Percy Harold.

Class II.

Field, Charles William
Gibson, Marian Alford Morgan
McKenzie, Norman Roderick
McPherson, Annie Eliza.

Class III.

Adams, Russell Gerald William
Drew, Gertrude Annie
Johnston, James Harvey
Low, David Walker
O'Dea, Patrick
Riley, Eveline Charlotte
Strong, Edward Herbert
Walker, Louisa F.
Young, Frederick William.

HONOURS MATHEMATICS.

Class II.

Watts, Percy Harold.

ANNUAL EXAMINATION.

MECHANICS.

Class II.

Baker, Harold Napier
Field, Charles William
Smith, Claire Scott
Speight, William Arthur.

Class III.

Low, David Walker
O'Dea, Patrick.

CHEMISTRY.

Class I.

Allen, Richard William.

Class II.

Goldstein, Herbert Meyer
Russell, Thomas
Watts, Percy Harold
Whitelaw, James Peddie.

Class III.

Bell, Fanny Madeleine.

PRACTICAL CHEMISTRY.

Bell, Fanny Madeleine
Goldstein, Herbert Meyer
Gray, William Orr
Russell, Thomas
Watts, Percy Harold
Whitelaw, James Peddie.

EXPERIMENTAL PHYSICS.

Class II.

Allen, Richard William
Goldstein, Herbert Meyer
Whitelaw, James Peddie.

Class III.

Bell, Fanny Madeleine
Prowse, Woodley Armstrong.

PRACTICAL PHYSICS.

Allen, Richard William
Bell, Fanny Madeleine
Goldstein, Herbert Meyer
Prowse, Woodley Armstrong.

BIOLOGY.

Class I.

Crump, Mabel Lilian
Goldstein, Herbert Meyer
McKenzie, Norman Roderick
Smith, Claire Scott.

Class II.

Bell, Fanny Madeleine.

Class III.

Cumming, Annie Sophia.
Hosking, Blanche Beatrice
Hosking, Winifred Christiana
Peacocke, Florence Lilian

ANNUAL EXAMINATION.

PRACTICAL BIOLOGY.

Senior.

Crump, Mabel Lilian
McKenzie, Norman Roderick

Junior.

Bell, Fanny Madeleine
Cumming, Annie Sophia
Goldstein, Herbert Meyer
Hosking, Blanche Beatrice
Hosking, Winifred Christiana
Peacocke, Florence Lilian.

GEOLOGY.

Class II.

Maclaurin, Kenneth Campbell.

Class III.

Pilkington, William Andrew
Walker, Louisa Florence.

PRACTICAL GEOLOGY.

Honours.

Major, Henry Dewsbury Alves
Mulgan, Edward Ker.

Pass.

Maclaurin, Kenneth Campbell.

MENTAL SCIENCE.

Class I.

Crump, Mabel Lilian
Young, Frederick William.

MUSIC.

Senior A.

Class I.

Anderson, Elizabeth Marion
Denison, Annie
Phillpot, James Henry

Class II.

Hamilton, Florence
Jones, Elizabeth Rosa
Lorrigan, E. M. P.
Peak, Millicent.

Senior B.

Class I.

Gittos, John Henry
Laing, Mary
Woollams, Eleanor M.

Class II.

Keary, Rachel
Kelsey, Olive.

Junior Division.

Class I.

Baker, Ida
Farrell, Mabel

GREER, James Courtney
LÜHNING, Frederick William
STUART, Arthur Henry.

CLASS II.

KENRICK, Aidie

CLASS III.

FARRELL, Georgina.
SOMMERVILLE, Jessie Leggat.

MATRICULATION DIVISION.

CLASS I.

CAVE, Winifred Maude
PARKER, Ernestine Mary.

CLASS II.

BUCKLAND, Ruth
ROSE, Lily Elizabeth
TANNER, Edith Melbora
THOMPSON, Kath[illegible] Mary
WILSON, Ellen [illegible]

CLASS III.

MARSHALL, Elizabeth Mildred
PARKER, Arabella
WRIGHT, Emma.

GLASGOW MEDALS.

In the Senior Division of the School of Music the Glasgow Medal for 1895 was awarded to

JOHN HENRY GITTOS.

In the Junior Division the Medal was awarded to

IDA BAKER.

PREMIUMS.

The Premiums offered were awarded as follows :—

Latin : P. DRUMMOND.

Proxime Accessit, ANNIE E. MCPHERSON.

English : H. W. WILLIAMS.

Mathematics : P. H. WATTS.

Chemistry : R. W. ALLEN.

Biology : MABEL L. CRUMP.

UNIVERSITY SENIOR SCHOLARSHIPS.

1888—GREEN, T. H., Experimental Science (Chemistry, Heat, Electricity).

1889—CARTER, F. J., Latin and English.
COWX, H. P., Mental Science.
GIFFORD, Sylvia E., Political Science.
NOTT, J. T., Natural Science (Zoology).

1890—JACKSON, D. H., Chemistry.
MACLAURIN, R. C., Mathematics.

1891—MAJOR, C. T., Mathematics.
SHREWSBURY, Elsie, Political Science.

1892—BOYLE, J., Chemistry.

1894—MAJOR, H. D. A., Geology.

UNIVERSITY JUNIOR SCHOLARSHIPS.

1885—Ecclesfield, Isabel
Carter, H. J.
Shrewsbury, H.
Sinclair, Mary M.
1886—Gifford, Sylvia E.
Carter, F. J.
1887—Maclaurin, R. C.
Jackson, D. H.
1888—La Trobe, W. S.
Morrison, Annie C.
1889—Boyle, John
Tebbs, B. N.
1890—Drummond, J.
Picken, Winifred
McCullough, R. A.
1891—Barclay, W. J.
1892—Drummond, P.
1893—Watts, P. H.
1894—McPherson, Annie E.
Allen, R. W.
Smith, Claire S.

EXHIBITION 1851 SCIENCE SCHOLARSHIP.

1892—Jackson, D. H.,* Chemistry.
1894—Maclaurin, J. S.,† Chemistry.

* Renewed by Commissioners in 1894 for a third year.
† Relinquished the Scholarship.

SINCLAIR SCHOLARSHIP.

1885—F. E. Wilson
1888—No Appointment
1895—No Appointment.

GILLIES SCHOLARSHIP.

1885—T. H. Green
1888—Jane D. Grant
1895—James C. Dromgool.

SYLLABUS OF LECTURES.

LATIN (Professor Arnold-Tubbs.)

The following courses will be delivered during the session:—

Translation.—Lectures on the prescribed books: Livy viii., Vergil *Georgics* ii: *in this order.*

The text-books to be used are Livy viii., edited by Müller-Wefflin (Leipzig *Teubner*): Vergil *Georgics* i-ii., edited by H. Sidgwick (Cambridge: *Pitt Press*)

Hours of Lecture: Monday and Thursday, 6—7 p.m.

Composition.—There will be two classes Junior and Senior. The Junior Course will deal with the Syntax of the sentence, and will lead up to continuous prose through the rendering of English Idiom. It is intended for those who have not previously received a sufficient grounding in Syntax and Idiom. In the Senior Course, continuous prose will be so treated as to illustrate the several Latin styles, and the standard of difficulty will be that of the B.A. pass examination, but the lectures of the first term will be of a less advanced kind.

Hours of Lectures: Junior Course, Monday, 7—8 p.m.
Senior: Thursday, 7—8 p.m.

Philology.—The course of lectures begun in 1895 will be continued through the current year. The subjects treated, will be Latin Philology, and—in connection with passages for translation at sight,—Latin Literature.

Hour of Lecture: Friday, 7—8 p.m.

"Honours" Lectures in Latin are subject to special arrangement. For the present, the hours of lecture are—Friday, 11—12 and 12—1 (tutorial.)

GREEK (Professor Arnold-Tubbs).

The following courses will be delivered:—

Translation: Lectures on the prescribed books—Xenophon, *Anabasis* iv.; Euripides, *Phoenissae: in this order.*

Text-books: Anabasis, by Pretor (Cambridge—*Pitt Press*); *Phoenissae* by Paley (London, G. Bell).

Hours of Lecture—Monday and Thursday, 8—9 p.m.

Composition.—Lectures will be of a tutorial character. Sidgwick's "Greek Prose Composition" will be used as a text-book.

Hour of Lecture—Saturday, 9—10 a.m.

"Honours" lectures in Greek are subject to special arrangement. For the present, lectures will be given on Tuesdays, 11—12 and 12—1.

ENGLISH LANGUAGE AND LITERATURE.

(Professor Egerton.)

The following courses of lectures will be delivered in the session of 1896:—

1. The Origin, Structure, and History of the English Language.—Students are recommended to provide themselves with Sweet's Primers of *Anglo-Saxon* and of *First* and *Second Middle English*, which will be used in conjunction with specimen papers to be supplied in the lecture room, for illustration, reference, and commentary.

Skeat's *Primer of English Etymology* and Morris' *Historical Outlines of English Accidence* (last edition) are recommended as text-books.

SYLLABUS OF LECTURES.

Hours of Lectures—Monday, 12 to 1 p.m. This lecture will be repeated on Tuesday, 6—7 p.m.

For Second Year Students, Thursday, 4—5 p.m.

2. The History of English Literature during the reign of Elizabeth. Treatment in detail of the lives and works of the principal writers of the period in question.

Text-books recommended—*The Student's Manual of English Literature* (or Saintsbury's *Elizabethan literature*); Dowden's *Shakspere Primer*.

Students are recommended to provide themselves with the *Globe Shakspere* which will be used in class for reference.

Hours of Lecture—Wednesday, 3—4 p.m. This lecture will be repeated on Wednesday, 7—8 p.m.

3. Lectures on certain books prescribed by the Senate of the University of New Zealand, viz.:—

George Eliot—*Romola*.

Shakspere—*King Lear* and *The Tempest* (Clarendon Press Edn.)

In connection with this class will be given instruction in English Composition.

Hour of Lecture—Thursday, 12—1 p.m. Lecture repeated Saturday, 9—10 a.m.

Lectures for Honours and M.A.—Monday, 3—4 p.m. and Wednesday, 11 a.m. to 12 noon. (Subject to alteration by arrangement with Professor).

EARLY ENGLISH TEXT SOCIETY'S PRIZES.

The course for these prizes is as follows:—Anglo-Saxon Grammar; Sweet's *Anglo-Saxon Reader; Specimens of Early English, Part II.* (Morris and Skeat).

SYLLABUS OF LECTURES.

MATHEMATICS (Professor Segar).

A course of lectures will be given on the Pure Mathematics prescribed for the degree of B.A. by the University of New Zealand. Students attending this course are supposed to be familiar with the mathematics required for the Matriculation Examination.

Hours of Lectures—Wednesday, 5—6 p.m.; Friday, 6—7 p.m.; Saturday, 10—11 a.m.

Text-books—Hall and Stevens' Euclid; Hall and Knight's Elementary Algebra; Hamblin Smith's Elementary Trigonometry.

The following courses of a more advanced nature will also be given :—

I. Euclidean Geometry, Algebra, and Trigonometry.

II. Conic Sections.

III. Differential and Integral Calculus.

IV. Solid Geometry and Differential Equations.

The times and textbooks for these courses will be arranged to suit the requirements of students taking them.

MATHEMATICAL PHYSICS (Professor Segar).

A course of lectures will be given on the Elementary Mechanics and Hydrostatics prescribed for the degree of B.A. by the University of New Zealand. Students taking this course should have some knowledge of Trigonometry.

Hours of Lecture—Wednesday, 8—9 p.m.; Saturday, 11—12 a.m.

Text-book—Jessop's Elements of Applied Mathematics.

The following courses of a more advanced nature will also be given :—

I. Elementary Dynamics, Statics, and Hydrostatics.

II. Dynamics of a Particle, and Analytical Statics.

III. Geometrical Optics, and Astronomy.

The times and text-books for these courses will be arranged to suit the requirements of students taking them.

CHEMISTRY (Professor Brown.)

General Course.

The characteristics of chemical action—The laws of chemical combination—The Atomic theory—Atomic weights and chemical symbols—Empirical, rational and constitutional formulæ—The physical and chemical properties and the modes of preparation of the more important elements and of their chief compounds including simple carbon compounds.

Hours of Lectures—Monday and Thursday, 5 p.m.

Advanced Course.

A course of lectures on Chemistry of a more advanced character will also be given and will deal more especially with theoretical chemistry. The subjects treated will include the determination of molecular and of atomic weights, the classification of the elements and the periodic law, and the relations between heat, light, and electricity and chemical action.

Hour of Lecture—Monday, 4 p.m.

CHEMICAL LABORATORY.

The Laboratory will be open on Tuesdays and Fridays from 2 p.m. to 5 p.m., on Fridays from 6 p.m. to 9 p.m., and on Saturdays from 10 a.m. to 1 p.m.

Instruction will be given in the Laboratory in all branches of Practical Chemistry, including qualitative and quantitative inorganic and organic analysis, and the preparation of chemical products.

Special facilities will be afforded to those who desire to study Practical Chemistry, as applied to different processes employed in the arts and manufactures.

All apparatus, gas, fuel, and ordinary reagents will be provided by the College; but a deposit of 10s. will be required from each student, to cover the cost of loss and breakage.

EXPERIMENTAL PHYSICS (Professor Brown).

Session of 1896.

First Term—Heat.

Introductory—Methods of measurement employed in Physics Thermometers and pyrometers—Expansion of solids, liquids, and gases—Absolute temperature—Application of the laws of expansion.

Phenomena of fusion, crystallisation, evaporation, and ebullition.

Hygrometry—Modes of measuring the hygrometric condition of the atmosphere.

Conduction, radiation, and absorption of heat.

Calorimetry, specific and latent heats—The elements of thermodynamics.

SYLLABUS OF LECTURES.

SECOND TERM—LIGHT.

Nature, production, and propagation of Light—The laws of reflection and refraction at plane and spherical surfaces—Prismatic dispersion and spectra—Interference—Double refraction and plane polarisation—The principal optical instruments and vision.

THIRD TERM—SOUND.

Sensation and external cause of sound—Mode of its transmission—Velocity of sound—Elements of a musical sound—Loudness and extent of vibration—Pitch and rapidity of vibration—Motion of sounding strings—Motion of sounding air columns—Resonance—Analysis of compound sounds—Interference—Beats—Consonance and dissonance.

Hours of Lectures—Tuesday and Friday at noon.

Note.—The course of instruction in Physics will in future extend over two years; but the arrangement is such that students may begin the study of Physics in any year.

A course of Lectures on Physics of an elementary character, but embracing the same subjects as the ordinary course, will be given in the evening during the session of 1896.

Hour of Lecture—Tuesday, 8 p.m.

SESSION OF 1897.

FIRST TERM.

Introductory—Methods of measurement employed in Physics.

Magnetism—Magnetic attraction and repulsion—Magnetic induction—Measurement of magnetic forces—Terrestrial magnetism.

SYLLABUS OF LECTURES.

Frictional electricity—Fundamental experiments of attraction and repulsion—Phenomena of induction—Electrical machines—The Leyden Jar—Measurements of potential, capacity, and quantity. Electrometers. Atmospheric electricity.

SECOND AND THIRD TERMS.

Current electricity—Galvanometers—Mutual action of magnets and currents—Electrolysis—Thermal effects of the electric current—Resistance.

Production of electric currents—The Voltaic cell—Thermo-electric currents—Induced currents—Magneto-electric and dynamo-electric machines.

Application of electricity to lighting and signalling.

PHYSICAL LABORATORY.

Practical instruction in Physics will, for the present, be given in the Chemical Laboratory, which will be open on Tuesdays and Fridays from 2 p.m. to 5 p.m., on Fridays from 6 p.m. to 9 p.m., and on Saturdays from 10 a.m. to 1 p.m.

BIOLOGY (PROFESSOR THOMAS).

1. GENERAL BIOLOGY.

Students who take either Botany or Zoology for the B.A. or B.Sc. degree of the New Zealand University are required to show a knowledge of the elements of General Biology, that is, of the general phenomena of life. The present course of

lectures is intended to cover the ground of the paper in General Biology, and will include the following subjects:—

Elements of the structure and physiology of plants and animals—Life-histories of typical forms of life.

Theories of Evolution—Outlines of Geographical Distribution—Succession of life in time.

Hour of Lecture—Wednesday, 6 p.m.

2. Botany.

Students who take Botany for the B.A. degree should attend the three courses—(*a*) General Biology, (*b*) Junior Botany, (*c*) Senior Botany. The three courses may be taken in one year, but any student who can devote two years to the subject, may defer attendance at the Senior Botany, and, if necessary, the General Biology also, until the second year. Students, whilst taking Junior Botany only, need not attend the Laboratory.

JUNIOR COURSE.

The form and structure of plants—The flowering plants—The more important orders of native and introduced flowering plants.

Hour of Lecture—Tuesday, 7 p.m.

SENIOR COURSE.

The vegetable tissues—The principal characters of the classes of plants—The structure and life-history of the prescribed types of plants for the Bachelor of Arts Degree.

Hour of Lecture—Monday, 7 p.m.

BOTANICAL EXCURSIONS.

Arrangements will be made for one or more Botanical Excursions during the year.

Text-book—*Prantl and Vines' Text-book of Botany.*

3. ZOOLOGY.

The principal characters of the chief classes and orders of animals—The structure and life-history of typical animals—The elements of comparative embryology—The main facts of the distribution of the Vertebrate animals in time and space.

Hour of Lecture—Wednesday, 12 noon.

Text-book—*Claus' Zoology, trans. A. Sedgwick.*

ZOOLOGY (HONOURS).

If required, a course of lectures will be given on Animal Morphology, Embryology, and Classification, as prescribed for the Senior Scholarship or Honours in Zoology.

BIOLOGICAL LABORATORY.

The Laboratory will be open during the following hours:—Monday, 2 p.m. to 5 p.m.; Wednesday and Friday, 6 p.m. to 9 p.m.; Saturday, 10 a.m. to 1 p.m.

Classes will be formed for the practical work in Botany or Zoology required for the Bachelor of Arts or Bachelor of Science degree. Students who take Botany will not require to perform any animal dissection.

Facilities will be afforded to persons not preparing for ex

aminations, but who desire to learn the use of the microscope and methods of studying plants and animals.

NOTE.—Special aid will be given to those who desire to learn the use of the microscope and the applications of biology in the arts and manufactures.

GEOLOGY (PROFESSOR THOMAS).

The ordinary course of instruction for students who take Geology for the B.A. or B.Sc. degree, is completed in one year, and includes two lectures weekly and attendance at the Laboratory twice a week. Those, however, who desire to do so, may spread the practical work over two years, attending once a week.

LECTURES.

History and object of geological study—Crust of the earth—Rocks and minerals—The geological action of air, water, ice, and living organisms—Volcanoes and volcanic action—Earthquakes—Metamorphism—Secular movements of the crust.

Architecture of the earth's crust.

Palæontology—Fossils and their uses—General structure of the classes of plants and animals found in the fossil state—Generalisations of Palæontology and their bearing on the theory of Evolution.

Chronological classification of rocks—Geological eras and periods—Geology of New Zealand—The characteristic features of the geological periods.

Hours of Lectures—Tuesday and Friday, 5 p.m.

Text-book—*Geikie's Class-book of Geology; or Geikie's Text-book of Geology.*

GEOLOGICAL LABORATORY.

The Laboratory will be open during the following hours:—Monday, 2 p.m. to 5 p.m.; Wednesday and Friday, 6 p.m. to 9 p.m.; Saturday, 10 a.m. to 1 p.m.

Practical instruction will be given in the following subjects:—The properties and identification of minerals—Rock-forming minerals—Characters of rocks—Structure of typical genera of fossil plants and animals—Characteristic fossils of the geological periods.

Special facilities will be afforded to those who wish to study the ores of the metals, rocks, &c., for the purpose of Mining.

Excursions will be arranged for the study of Field Geology.

FRENCH LANGUAGE AND LITERATURE.

(MR. DE MONTALK.)

The following courses of lectures will be delivered in the session of 1896:—

Junior Lectures—(*a*) Idioms and Grammar of the French Language.

(*b*) Reading of part of the prescribed books for 1897—de Tocqueville "L' Ancien Régime et la Révolution."

Senior Lectures—(*a*) Origin, Structure, and History of the French Language.

(*b*) Literature—Period, the Seventeenth Century.

(*c*) Reading—Bossuet, Oraisons "funèbres," Racine, "Athalie, Andromaque."

Honour Lectures—As per regulation.

Hours of Lectures—Junior, Wednesday, 4 to 5 p.m.; Saturday, 11 to 12.

Senior, Thursday, 5 to 6 p.m.; aturday, 12 to 1.

Honours, Tuesday, 4 to 5 p.m.; Friday, 4 to 5 p.m.

(Subject to alteration by arrangement with the Lecturer.)

MUSIC (Herr Carl Schmitt).

JUNIOR DIVISION.

Hours of Lecture—Mondays, 6.15—7.15 p.m.; Wednesdays, 4 p.m., and Fridays, 4 p.m., for matriculation.

Elements of Music: Notes, rests, clefs, intervals, scales, time, abbreviations, and other signs.

Harmony: Common chords, chords of the dominant 7th, dominant 9th, dominant 11th and 13th, suspensions, chords—the augmented 6th, cadences, passing notes, sequences, modulation, harmonizing melodies.

Counterpoint: Single counterpoint; all species in two and three parts.

History of Music.

SYLLABUS OF LECTURES.

SENIOR DIVISION.

Hours of Lecture—Mondays, 7.15 to 8.15 p.m.; Wednesdays, 3 p.m.; Fridays, 3 p.m.

HARMONY: Up to four and five parts.

COUNTERPOINT: In four and five parts.

DOUBLE COUNTERPOINT: Canon and fugue in two parts.

FORM: The various forms employed in classical compositions.

INSTRUMENTATION: A knowledge of the compass, capabilities, and quality of tone of the different instruments employed in a modern orchestra.

HISTORY OF MUSIC.

The above-mentioned lectures are delivered in the Choral Hall, Symond Street.

Graduates.

The following are the Graduates of the University of New Zealand, whose names are on the College Register:—

Bachelors of Arts.

Aubin, Emile Dupont, 1891
Boyle, John, 1893
Broad, Charles Harrington, 1893
Carter, Henry James, 1894
Clayton, Charles Zeigler (LL.B., 1886), 1883
Coleman, Margaret Annabella, 1887
Cronin, Bartholomew, 1884
Drummond, James, 1894
Dudley, Eleanor Dorothy, 1894
Durrieu, Louisa, 1889
Ecclesfield, Isabel, 1891
Ellis, Percy Sylvester Gilbert, 1893
Frost, Constance Helen, 1893
Galwey, John de Burgh, 1893
Grant, Jane Donaldson, 1893
Hamilton, Robert James, 1895
Hill, Mary Lilian, 1889
Horton, Henry, 1892
James, Herbert Louis, 1886
Kerr, Walter, 1886
Knapp, Jessie, 1891
Lindsay, Peter Alexander (M.B. and C.M., Edinburgh), 1884
Maclaurin, Richard Cockburn, 1891
Mahon, Harold James del Monte, 1895
Major, Henry Dewsbury Alves, 1895
McCullough, Robert Alexander, 1895
McDowell, William Chisholm Wilson, 1885
Moore, Joseph Harold, 1893
Mulgan, Edward Kerr, 1895
Murray, Annie, 1893

GRADUATES.

MURRAY, Donald, 1890
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Calendar 1895.

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Twelfth Report of the State Mineralogist.

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Calendar 1893-94, 1894-95 and 8 Pamphlets.

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Catalogue 1895.

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PRESENTATIONS.

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APPENDIX.

ANNUAL EXAMINATION,

OCTOBER, 1895.

LATIN TRANSLATION.

Examiner: Professor Arnold Tubbs.

I. Translate, adding short marginal notes where you think them required—

(a) Armorum quantum quaeque civitas domi quodque ante tempus efficiat, constituit; imprimis equitatui studet. Summae diligentiae summam imperii severitatem addit: magnitudine supplicii dubitantes cogit. Nam maiore commisso delicto igni atque omnibus tormentis necat, leviore de causa auribus desectis aut singulis effossis oculis domum remittit, ut sint reliquis documento et magnitudine poenae perterreant alios.

(b) Haec faciunt reciperandorum suorum causa: sed contaminati facinore et capti compendio ex direptis bonis, quod ea res ad multos pertinebat, timore poenae exterriti consilia clam de bello inire incipiunt civitatesque reliquas legationibus sollicitant. Quae tametsi Caesar intellegebat, tamen quam mitissime potest legatos appellat: nihil se propter inscientiam levitatemque vulgi gravius de civitate iudicare neque de sua in Aeduos benevolentia deminuere.

(c) Cum his mihi res sit, qui eruptionem probant: quorum in consilio omnium vestrum consensu pristinae residere virtutis memoria videtur. Animi est ista mollitia, non virtus, paulisper inopiam ferre non posse. Qui se ultro morti offerant, facilius reperiuntur, quam qui

dolorem patienter ferant. Atque ego hanc sententiam probarem (tantum apud me dignitas potest) si nullam praeterquam vitae nostrae iacturam fieri viderem: sed in consilio capiendo omnem Galliam respiciamus, quam ad nostrum auxilium concitavimus Quid hominum milibus LXXX uno loco interfectis propinquis consanguineisque nostris animi fore existimatis, si paene in ipsis cadaveribus proelio decertare cogentur?

(d) At si cognatos, nullo natura labore
quos tibi dat, retinere velis servareque amicos,
infelix operam perdas, ut si quis asellum
in campo doceat parentem currere frenis.

(e) Illum
balbutit scaurum, pravis fultum male talis.
parcius hic vivit: frugi dicatur. Ineptus
et iactantior hic paullo est: concinnus amicis
postulat ut videatur.

(f) Adsit
regula, peccatis quae poenis irroget aequas,
ne scutica dignum horribili sectere flagello.
Nam ut ferula caedas meritum maiora subire
verbera, non vereor, cum dicas esse pares res
furta latrociniis et magnis parva mineris
falce recisurum simili te, si tibi regnum
permittant homines. Si dives, qui sapiens est,
et sutor bonus et solus formosus et est rex,
cur optas quod habes?

(g) Beatus Fannius ultro
delatis capsis et imagine: cum mea nemo
scripta legat volgo recitare timentis ob hanc rem
quod sunt quos genus hoc minime iuvat, utpote pluris
culpari dignos.

(h) Contra Laevinum, Valeri genus, unde superbus
Tarquinius regno pulsus fugit, unius assis
non unquam pretio pluris licuisse, notante
iudice quo nosti populo, qui stultus honores
saepe dat indignis et famae servit ineptus,
qui stupet in titulis et imaginibus. Quid oportet

nos facere a volgo longe longeque remotos?
Namque esto populus Laevino mallet honorem
quam Decio mandare novo, censorque moveret
Appius, ingenuo si non essem patre natus:
vel merito, quoniam in propria non pelle quiessem.

(i) Turgidus Alpinus iugulat dum Memnona, dumque
defingit Rheni luteum caput, haec ego ludo,
quae neque in aede sonent certantia iudice Tarpa,
nec redeant iterum atque iterum spectanda theatris.

(k) Et fortasse cupressum
scis simulare: quid hoc, si fractis enatat exspes
navibus aere dato qui pingitur?

(l) Debemur morti nos nostraque: sive receptus
terra Neptunus classes aquilonibus arcet,
regis opus, sterilisve diu palus aptaque remis
vicinas urbes alit, et grave sentit aratrum,
seu cursum mutavit iniquum frugibus amnis
doctus iter melius: mortalia facta peribunt,
nedum sermonum stet honos et gratia vivax

(m) Romani pueri longis rationibus assem
discunt in partes centum diducere. "Dicat
filius Albini: si de quincunce remota est
uncia, quid superat? Poteras dixisse." "Triens." "Eu!
rem poteris servare tuam. Redit uncia quid fit?"
"Semis." An haec animos aerugo et cura peculi
cum semel imbuerit, speramus carmina fingi
posse linenda cedro et levi servanda cupresso?

(n) Quintilio si quid recitares, "Corrige sodes
hoc" aiebat "et hoc": melius te posse negares
bis terque expertum frustra, delere iubebat
et male tornatos incudi reddere versus.
Si defendere delictum quam vertere malles,
nullum ultra verbum aut operam insumebat inanem.

II. Comment upon the following (syntax, allusions or difficulties):—

Omnibus consiliis antevertendum existimavit, ut Narbonem proficisceretur—perpaucis desideratis quin cuncti caperentur—glebas per manus traditas in ignem e regione turris proiciebat—id silentio noctis conati—homines insueti laboris—insimulati proditionis-quasi vero, inquit, consilii sit res—castra ad Gergoviam movit—Caesar receptui cani iussit—quibus hae partes ad defendendum obvenerant.

Est inter Tanain quiddam socerumque Viselli—catillum Evandri manibus tritum—pater Chrysippus—Ecce Crispinus minimo me provocat—laborantes dum ferrum molliat ignis—personatus pater—Lydorum quicquid Etruscos incoluit fines nemo—sumere clavum—obeundus Marsya—dispeream, ni submosses omnes—o seri studiorum, quine putetis . .—molle atque facetum Vergilio annuerunt gaudentes rure Camenae—fingere cinctutis non exaudita Cethegis—vel qui praetextas vel qui docuere togatas-fiet Aristarchus.

Versibus impariter iunctis, querimonia primum,
post etiam inclusa est voti sententia compos.

ne pueros coram populo Medea trucidet.

Carmine qui tragico vilem certavit ob hircum,
mox etiam agrestes satyros nudavit, et asper
incolumi gravitate iocum temptavit, eo quod
illecebris erat et grata novitate morandus
spectator, functusque sacris et potus et exlex,

III. Discuss any two of the following:—The "dramatic unities."

The value of Horace's literary criticisms and their impartiality.

The nature of Horatian, as compared with modern, satire.

"Le style c'est l'homme" as applied to Cæsar.

The date, purpose, and merit of the 'Ars Poetica.'

ANNUAL EXAMINATION.

IV. Draw a map of Gaul showing distribution of chief tribes, and insert the following:—Noviodonum, Vesontio, Genabum, Gergovia, Alesia, Cevenna Mons, Dubis (Fluvius), Arar (Fluvius), Lutetia. Add, where known, modern names.

V. Translate the following passages:—

(a) Vilice silvarum et mihi me reddentis agelli,
quem tu fastidis habitatum quinque focis et
quinque bonos solitum Variam dimittere patres,
certemus, spinas animone ego fortius an tu
evellas agro, et melior sit Horatius an res.
Me quamvis Lamiae pietas et cura moratur,
fratrem maerentis, rapto de patre dolentis
insolabiliter, tamen istuc mens animusque
fert et amat spatiis obstantia rumpere claustra.
Rure ego viventem tu dicis in urbe beatum.
Cui placet alterius sua nimirum est odio sors.
Stultus uterque locum inmeritum causatur inique:
in culpa est animus, qui se non effugit unquam.

Horace.

(b) Fuit, fuit ista quondam in hac re publica virtus, ut viri fortes acrioribus suppliciis civem perniciosum quam acerbissimum hostem coercerent. Habemus senatus consultum in te, Catilina, vehemens et grave: non deest rei publicae consilium neque auctoritas huius ordinis: nos, nos, dico, aperte consules desumus.

Cicero.

(c) Principio statim anni nihil prius quam de lege agebatur Sed ut inventor legis Volero, sic Laetorius auctor cum recentior tum acrior erat. Is cum Volero nihil praeterquam de lege loqueretur, insectatione abstinens consulum, ipse in accusationem Appi exorsus cum a patribus non consulem sed carnificem ad vexandam plebem creatum esse contenderet, rudis in militari homine lingua non suppetebat libertati animoque. Itaque deficiente oratione "quando quidem non facile loquor"

inquit "Quirites, quam, quod locutus sum, praesto, crastino die adeste. Ego hic aut in conspectu vestro moriar aut perferam legem."

Livy.

ANNUAL EXAMINATION.

LATIN COMPOSITION, GRAMMAR AND PHILOLOGY.

Examiner: PROFESSOR ARNOLD TUBBS.

I. -Translate into Latin Prose:—

Now Crœsus, when he saw the Greeks that were in Asia had been humbled even unto the paying of tribute, was greatly lifted up in spirit and bethought him that he would build a fleet to subdue also those of the islands. And for the space of a year they were building tall ships of war in all the king's ports. But when now all things were ready there came to the king one Bias, a wise man, of Priene, whom when he had asked what news he brought from Greece, straightway Bias made answer that "they of the islands are buying great store of horses as meaning, sire, to bring war upon thee and this fair Lydia of thine." At that the king was mightily troubled. But to Bias he said not knowing that the other dealt subtilly with him, "Verily the Gods are kind: so would I naught better than that these islanders should come against the men of Lydia with horses and chariots." And at this Bias brake in saying "and what else thinkest thou, sire, these Greeks pray, an if not the like, that thou being a landsman shouldst come against them with ships, who knowest naught of the sea." Then the king perceived the counsel of Bias and turned from his folly, so that he thought no more of building of ships: and the land had rest from war."

II.—Grammar of prescribed books:—

(a) Parse fide (commissa), quis, agedum, surrexe, ausim, sodes.

(b) Give the chief rules for the scansion of Latin hexameter verse. Scan the following, and account for any peculiarities:—

1. Illuc, unde abii, redeo nemo ut avarus,
Se probet ac potius, &c.

2. Usque ad mala citaret, "io Bacche!" modo summa,

3. Pauca: abeo: et revocas nono post mense iubesque esse in amicorum numero; magnum hoc ego duco.

III.—General Grammar.—

(a) Give accusative plural of the following, marking quantity of vowel:—ovis, turris, inops, nubes, gradus, dens, spes. Are the forms in use phonetically correct? If not explain how the form in use has arisen.
Also, meaning and principal parts of—attigo, obtingo, excludo, explodo, acquiro, defendo. Explain the composition of these verbs, and account for any vowel changes which may be observed by comparing the compound with the simple stem.

(b) Give full rules for Oratio Obliqua in Latin, illustrating each rule by an example.

(c) Give briefly the origin and uses of the Genitive case. Illustrate by examples. Explain the "genitives" in the following:—Haud flocci facio, pluris hoc stetit, at Romae orta est seditio.

IV.—Philology—

(a) What is "Labialization" and what "Ablaut"? Explain and illustrate fully.

(b) Analyse into their component parts—concido, nisus, cuius, paterfamilias, fugi, ferritribaces, irrevocabilis.

(c) Take the following passage and show what laws of Latin phonetism the several words illustrate:—
Brevi spatio interiecto, vix ut rebus, quas constituissent, collocandis tempus daretur, hostes ex omnibus partibus signo dato lapides in vallum conicere. Nostri quod iussi sunt, statim faciunt.

N.B.—All candidates must attempt (b), but as an alternative to (a) and (c) may take the following:—

1. What is meant by "contamination"? Show how contamination has affected the uses classed under the Ablative case of Latin.

2. What uses of the Subjunctive may be classed under the head "Prospective"? Explain and illustrate fully.

V.—Translate into Latin :—

1. He was too prudent to attempt to cheat his father.

2. It was in this the hottest battle of the Peninsular war that Wellington so nearly lost his life.

3. You must take your pound of flesh without spilling one drop of blood.

4. Let your knowledge be deep rather than wide.

ANNUAL EXAMINATION.

ENGLISH LANGUAGE.

Examiner: PROFESSOR EGERTON.

Only ten questions to be attempted, among which must be questions 7, 8, 9, *and* 11.

1. Explain with examples the following terms: Phonetic decay, mutation, gradation, sound-shifting.

2. Sketch the changes that the English language underwent previous to 1400; show how, and from what sources the vocabulary was increased.

3. "[Modern English spelling] is governed by two conflicting principles, neither of which, even in its own domain, is consistently carried out" (Skeat).

   State the principles referred to, and discuss Professor Skeat's assertion, illustrating by examples.

4. Write short etymological notes on the following words:—Children, songstress, hight, such, can, may, shall, prevaricate, umpire, alligator.

5. Show in what ways words may change in meaning. Give examples.

6. Explain the changes that the English inflectional system has undergone, stating the causes of those changes; illustrate by examples.

7. Translate the following passages, adding notes as to the dialect in which each is written:—

(a) Eft is heofona rice ġelīc thæm mangere the sôhte thæt gōde meregrot. Thā hē funde thæt ān dēor-wierthe mere grot, thā ēode hē, and sealde eall thæt hē āhte, and bohte thæt mere grot.

(b) Hēr fōr se here of East-englum ofer Humbre-muthan to Eoforwīc ceastre on North-hymbre. And thær was micel ungethwærnes thære thēode betwix him-selfum, and hīe hæfdon hiera cyning āworpenne Osbryht, and un-gecyndne cyning underfēngon Ælllan. And hīe late on gēare to thæm gecierdon thæt hīe with thone here winnende wæron and hīe thēah micle fierd gegadrodon, and thone here sōhton æt Eoforwīc ceastre.

(c) Hou sal it far of us kaytefes,
That in sin and foli lyfes,
Quhen thou that led sa hali lyfe,
Was demed tille hell for to drife.

(d) And for Grimm thæt place aucte,
The stede of Grim the name laucte
So that hit Grimsbi calleth alle,
That thereof speken alle
And so shulen men callen it ay.

8. (a) Give the substance of Carlyle's remarks on Natural Supernaturalism

(b) Explain—"Long-drawn systole and long-drawn diastole.

"If Field Lane . . . be a Dionysius' ear, then is Monmouth street a Mirza's Hill."
"America is here or nowhere."
"Never as I compute, till after the sorrows of Werter, was there a man found who could say: Come, let us make a description! Having drunk the liquor, come, let us eat the glass!"
"Ahrimanism."
"Macaronic Verses."
"It was Tubal Cain made thy very tailor's needle."

9. Show how *Samson Agonistes* bears upon the life and times of Milton. Illustrate your answer by quotations.

Explain—"Used no ambition to commend my deeds."
"Thy boistrous locks."

[Thy] "Brigandine of brass, thy broad habergeon,"
Vant-brace and greves."
" of stock renowned
As Og, or Anak and the Emins old
that Kiriathaim held."
"Thy paramynph."

10. Compare Shelley's view of the character of Prometheus with that taken by Æschylus.

11. How are Shelley's views on Politics, Religion and Life expressed in *Prometheus Unbound*.

Explain.—"Amphisbænic snake," "The interlunar air,"
"Nepenthe, Moly, Amaranth."
"Like him whom the Numidian seps did thaw
Into a dew with poison."

12. Give the substance of Harapha's interview with Samson.

ANNUAL EXAMINATION.

ENGLISH LITERATURE.

Examiner : PROFESSOR EGERTON.

At least one hour should be devoted to the Essay.

1. Compare Byron and Wordsworth as representatives of the spirit of the French Revolution.

2. Show how Coleridge's *Ancient Mariner* expresses the influences of the Period at which it was written. Give a list of his principal works with dates.

3. Estimate the place of Keats in the History of English Poetry.

4. Compare Dickens and Thackeray as novelists.

5. What is the date of the publication of *In Memoriam?* Give a brief account of the metre, subject matter and general scope of the poem, comparing it with other English elegies.

6. Give a short account and criticism of any two of the following poems :—*Pippa Passes, The Statue and the Bust, Ivan Ivanovitch, Andrea del Sarto.* Show how the poems chosen illustrate Browning's view of life.

7. Compare the styles of de Quincey and Macaulay ; how did Matthew Arnold criticise the latter ? State your reasons for or against this criticism.

8. Fix the following quotations, adding any explanatory remarks you may deem necessary :—

   (a) Think you, 'mid all this mighty sum
   Of things for ever speaking
   That nothing of itself will come
   But we most still be seeking

(b) He prayeth best who loveth best
All things, both great and small

(c) My hopes are with the dead, anon
My place with them shall be
And I with them shall travel on
Through all futurity.

(d) Where's the coward that would not dare
To fight for such a land

(e) Beauty is truth—truth beauty—that is all
Ye know on earth, and all ye need to know.

(f) Peace, peace! He is not dead, he doth not sleep!
He hath awakened from the dream of life.

(g) The lights begin to twinkle from the rocks,
The long day wanes; the slow moon climbs; the sea
Moans round with many voices.

(h) Oh, the wild joys of living! The leaping from rock up to rock
The strong rending of boughs from the fir-tree, the cool silver shock
Of the plunge in a pool's living water.

(i) Do I view the world as a vale of tears?
Ah, reverend sir, not I!

(k) O blessed bird! the earth we pace
Again appears to be
An unsubstantial, faery place
That is fit home for thee!

9. What are ottava rima, Spenserian stanza, sonnet metre? Mention notable compositions in each style.

10. SUBJECT OF ESSAY.

The teaching of Carlyle as exhibited in *Sartor Resartus*

or

Shelley considered as an Allegorical Poet.

ANNUAL EXAMINATION.

FRENCH TRANSLATION.

Senior French—Pass Examination.

Examination: E. de Montalk, B.ès. L. etc.

1. Translate into English—

A peine nous sortions des portes de Trézène;
Il était sur son char; ses gardes affligés
Imitaient son silence autour de lui rangés;
Il suivait tout pensif le chemin de Mycènes;
Sa main sur ses chevaux laissait flotter les rênes;
Ses superbes coursiers, qu'on voyait autrefois
Pleins d'une ardeur si noble obéir à sa voix,
L'œil morne maintenant, et la tête baissée,
Sêmbaient se conformer à sa triste pensée.
Un effroyable cri, sorti du fond des flots,
Des airs en ce moment a troublé le repos;
Et, du sein de la terre, une voix formidable
Répond en gémissant à ce cri redoutable.
Jusqu'au fond de nos cœurs notre sang s'est glacé;
Des coursiers attentifs le crin s'est hérissé.
Cependant, sur le dos de la plaine liquide,
S'élève à gros bouillons une montagne humide;
L'onde approche, se brise, et vomit à nos yeux,
Parmi des flots d'écume, un monstre furieux.
Son front large est orné de cornes menaçantes;
Tout son corps est couvert d'écailles jaunissantes;
Indomptable taureau, dragon impétueux,
Sa croupe se recourbe en replis tortueux;
Ses longs mugissements font trembler le rivage.
Le ciel avec horreur voit ce monstre sauvage;
La terre s'en émeut, l'air en est infecté;
Le flot qui l'apporta recule épouvanté.
Tout fuit; et, sans s'armer d'un courage inutile,
Dans le temple voisin chacun cherche un asile.
Hippolyte lui seul, digne fils d'un héros,
Arrête ses coursiers, saisit ses javelots,
Pousse au monstre, et d'un dard lancé d'une main sûre

Il lui fait dans le flanc une large blessure.
De rage et de douleur le monstre bondissant,
Vient aux pieds des chevaux tomber en mugissant,
Se roule, et leur présente une gueule enflammée
Qui les couvre de feu, de sang et de fumée.
La frayeur les emporte; et, sourds à cette fois,
Ils ne connaissent plus ni le frein ni la voix;
En efforts impuissants leur maître se consume.
Ils rougissent le mors d'une sanglante écume.
On dit qu'on a vu même, en ce désordre affreux,
Un dieu qui d'aiguillons pressait leurs flancs poudreux.
A travers les rochers la peur les précipite;
L'essieu crie et se rompt; l'intrépide Hippolyte
Voit voler en éclats tout son char fracassé;
Dans les rênes lui-même il tombe embarrassé.

2. What do you know about the above passage?

3. Translate into English—

Les moissons, pâles dans le Nord, ondoient ici avec un reflet d'or rougeâtre. Un soleil plus chaud fait reluire plus richement la verdure vigoureuse; les tiges de maïs sortent de terre en fusées, et leurs fortes feuilles chiffonnées retombent en panaches; il faut ces rayons ardents pour pousser la séve à travers ces lourdes fibres et dorer l'épi massif. Vers Gan, les collines sur lesquelles ondule la route se rapprochent, et l'on chemine en de petits vallons verts, plantés de frênes et d'aunes, qui se groupent en bouquets selon le caprice des pentes, et trempent leurs pieds dans l'eau vive; un ruisseau bien clair court le long de la route, à flots sombres et pressés sous le couvert des arbres, et, par échappées, brillant et bleu comme le ciel. A chaque quart de lieue, il recontre un moulin, bondit et écume, puis reprend son allure précipitée et furtive; pendant deux lieues nous l'accompagnons, presque cachés dans les arbres qu'il nourrit, et respirant la fraîcheur qu'il exhale. L'eau, dans ces gorges, est la mère de toute vie et la nourrice de toute beauté.

A Louvie s'ouvre la vallée d'Ossau, entre deux montagnes boisées de broussailles, pelées par places, tachées de

mousses et de bruyères, dont les rocs font saillie comme des os, et dont les flancs s'avancent en bosselures grisâtres où se courbent en crevasses sombres. La plaine des moissons et des prairies s'enfonce dans les anfractuosités comme en des criques; son contour se plie autour de chaque masse nouvelle; elle s'essaye à gravir les premières croupes, et s'arrête vaincue par la pierre stérile. On traverse trois ou quatre hameaux blanchis de poussière, dont les toîts brillent d'une couleur lourde, semblable à du plomb terni. Là l'horizon se ferme; le mont Gourzy, couvert d'une robe de forêts, barre la route; au delà et plus haut, comme une deuxième barrière, le pic du Ger lève sa tête chauve, argentée de neige. La voiture escalade lentement une rampe qui serpente sur le flanc de la montagne; au détour d'un rocher, dans une petite gorge abritée, on aperçoit les Eaux-Bonnes.

4. Give the etymology of—*moisson*, *flot*, *allure*, *broussailles*, and *rampe*, and comment on the expression "*on chemine en de petits vallons verts.*"

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ANNUAL EXAMINATION.

GRAMMAR AND PHILOLOGY.

SENIOR FRENCH—PASS EXAMINATION.

Examiner: E. DE MONTALK, B.ès. L. etc.

1. On what principle is the rule relative to the position of the *Adjectif qualificatif* founded?

2. Why are *bonheur*, *labeur*, *chêne*, *magnétisme*, and *devoir* masculine; while *feuille*, *corne*, *électricité*, *condition et ville* are feminine?

3. Distinguish between *la chair* and *la chaire*, *penser* and *panser*, *baiser* and *baisser*, *la foi* and *le foie*, *le matin* and *le mâtin*.

4. Translate into French—

   It has been raining;
   He has been complaining;
   Go and fetch some;
   It will freeze to-morrow;
   People say the Pope is dead.

5. Give the etymology of—*roide*, *châtier*, *abeille*, *géant*, *chèvre*, *parole*, *tête*.

6. What is the origin of the adverbial suffix *ment?*

7. Give examples of the intercalation of *d* between *n* and *r*. What is the scientific name of that intercalation?

8. Write a short essay on the *participe passé* with *avoir*.

9. What is meant by *diphthongaison?* Give examples.

ANNUAL EXAMINATION.

COMPOSITION AND LITERATURE.

SENIOR FRENCH—PASS EXAMINATION.

Examiner: E. DE MONTALK, B.ès. L. etc.

1. Translate into French—

It is related of William of Orange, that whilst he was besieging a town on the continent, a gentleman sent to him on public business came to his camp, and, learning that the King was before the walls, he ventured to go where he was. He found him directing the operation of his gunners, and having explained his errand and received his answer, the King said, "Do you know, sir, that every moment you spend here is at the risk of your life?" "I run no more risk," replied the gentleman, "than your Majesty." "Yes," said the King, but my duty brings me here, and yours does not." In a few minutes a cannon-ball fell on the spot, and the gentleman was killed.

Thus can the faithful student reverse all the warnings of his early instinct, under the guidance of a deeper instinct. He learns to welcome misfortune, learns that adversity is the prosperity of the great. He learns the greatness of humility. He shall work in the dark, work against failure, pain, and ill-will.

2. Translate also—

What is he looking for?
What are you thinking of?
What are they laughing at?
There are ups and downs in life.

3. Write a short essay (in French) on Balzac.

4. Explain what is meant by *Romantisme?* What preceded it? What followed it?

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5. Choose between Claude Henry de Saint Simon, Lamennais, or Proudhon, and state what you know of the life and works of the author you have selected.

6. Under what *noms de plume* have Henri Beyle, Madame Dudevant, Madame de Girardin, and De Jouy written?

7. Give as complete a list as you can of the works of Hugo, Lamartine, Béranger, Guizot, Michelet, Dumas, Sue, Sismondi, Ampère, Sainte-Beuve, De Vigny, Cousin.

ANNUAL EXAMINATION.

JUNIOR FRENCH.

Examiner: E. DE MONTALK, B.ès. L. etc.

1. Translate into English:—

Et certainement, messieurs, si quelque chose pouvait élever less hommes au-dessus de leur infirmité naturelle; si l'origine qui nous est commune souffrait quelque distinction solide et durable entre ceux que Dieu a formés de la même terre, qu'y aurait-il dans l'univers de plus distingué que la princesse dont je parle? Tou, ce que peuvent faire non seulement la naissance et la fortune, mais encore les grandes qualités de l'espritt pour l'élévaion d'une princesse, se trouve rassemblé et puis anéanti dans la nôtre. De quelque côté que je suive les traces de sa glorieuse origine, je ne découvre que des rois, et partout je suis ébloui de l'éclat des plus augustes couronnes. Je vois la maison de France, la plus grande sans comparaison de tout l'univers, et à qui les plus puissantes maisons peuvent bien céder sans envie, puisqu'elles tâchent de tirer leur gloire de cette source je vois les rois d'Ecosse, les rois d'Angleterre, qui ont régné depuis tant de siècles sur une des plus belliqueuses nations de l'univers, plus encore par leur courage que par l'autorité de leur sceptre. Mais cette princesse, née sur le trône, avait l'esprit et le cœur plus hauts que sa naissance. Les malheurs de sa maison n'ont pu l'accabler dans sa première jeunesse; et dès lors on voyait en elle une grandeur qui ne devait rien à la fortune. Nous disions avec joie que le ciel l'avait arrachée comme par miracle des mains des ennemis du roi son père, pour la donner à la France: don précieux, inestimable présent, si seulement la possession en avait été plus durable!

2. Translate also:—

Il ne faut pas s'embarquer sans biscuit—Mieux vaut mal que pis—Il va joujours son petit bonhomme de chemin

—Les maladies viennent à cheval et s'en retournent à pied—On est, en vieillissant, sujet à prendre une marotte.

3. Translate into French:—

How do you do? Very well, thank you. Be good enough to sit down. With pleasure. May I offer you a cup of tea? Yes, thanks. What a pretty bonnet you have. Where did you buy it? I bought it yesterday in Queen-street.

4. Translate also:—

If you wish to gain a real insight into the nature of French wit, read the "*Théâtre Complet*" of Eugène Labiche. What genuine humour! What unaffected gaiety! What truly French light-heartedness! And with all this, what a vein of morality—that true morality which is never wearisome! A fig for those jaundiced censors who look upon the theatre as a pulpit! Labiche is no sermoniser. To none, more appropriately than to him who has, for the last forty years, been emancipating us from the trammels of conventionality, can be applied the well-known motto of the poet Santeuil: "*Castigat ridendo mores.*"

Eugène Labiche was born in Paris in 1815. His family intended him for the bar, but he had no taste for legal quibbling, and was not long in abandoning a study so little in harmony with his turn of mind, in favour of literature. His first play, *l'Homme infiniment poli*, which he wrote for Grassot's *début* at the Palais-Royal Theatre, appeared in 1838, and from that time vaudevilles and comedies have emanated from his fertile pen without the slightest symptom of exhaustion.

5. Give the French for:—

Long ago—on the way—so much the worse—it is early yet—in half-an-hour—half that sum—two hundred ships—Napoleon died in eighteen hundred and twenty-one.

6. What is the French spelling of the words identical with :—

Captain, judge, tyrant, amiable, garrison, example, admiral, cannon, brilliant, cavalry.

7. What are the diminutives of *lion*, *tour*, *fille*, *manteau*, *côte*, *carafe*, *île*, *chat*.

8. Write down both participles, and the first person singular of the present indicative and preterite of *joindre*, *prendre*, *savoir*, *unir*, *asseoir*.

9. Distinguish between :—*Il a cinquante ans* and *il y a cinquante ans ; le monde entier* and *tout le monde ; il en faut beaucoup* and *il s'en faut beaucoup ; il est trop fort* and *c'est trop fort ; il est tard* and *il se fait tard*.

10. Give the rules for the formation of compound nouns in French. Give examples.

ANNUAL EXAMINATION.

HISTORY.

Examiner: Mr. J. H. Turner, M.A.

1. Give an account of the conversion of the English to Christianity.

2. Draw a map showing the extent of the various English Kingdoms during the reign of Offa of Mercia.

3. Explain the terms *thegn*, *weregild*, *frankpledge*, *scutage*.

4. "The Saxons brought with them, in their invasion of England, their threefold division of rank, their association or township, their Pagus or Hundred, the Mark System, ... and the Comitatus."

   Explain the above quotation, and briefly describe the influence of the Norman Conquest on the Saxon system of land tenure.

5. Write a short account of each of the following:—Synod of Whitby, Constitutions of Clarendon, First Statute of Westminster, Provisions of Oxford.

6. Summarise the character and work of Henry II.

7. Describe the events that led to the signing of the Great Charter.

   What are its most important provisions?

8. Briefly sketch the relations of England with France during the reign of Edward III., and of England with Scotland during the reign of Edward I.

9. Write a short account of each of the following:—Dunstan, Anselm, William Wallace, Roger Bacon, John Wyclif.

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10. Write a brief account of the Peasant Revolt and of the state of the lower orders of English society at the time.

(All the questions are to be attempted.)

ANNUAL EXAMINATION.

POLITICAL ECONOMY.

Examiner: Mr. J. H. Turner, M.A.

1. Define the following terms:—Standard of Comfort, Margin of Cultivation, Final Utility, Exchange Value, Market.

2. "Every prodigal is a public enemy; every frugal man a public benefactor."

   Explain this statement.

3. Show how the appearance of Adam Smith's "Wealth of Nations" affected existing economic theories.

4. "Labour is the chief, if not the sole, human agent in production, and the non-labouring classes are consequently non-productive classes."

   Examine this statement and show the importance of its bearing on Socialistic industrial theories.

5. What is meant by the "Balance of Trade?"

   Why are the exports of New Zealand not balanced by the imports?

6. Give a brief account of the origin of our Banking system.

   What are the influences that determine the Bank rate of discount?

7. What are the chief advantages that co-operation has in competition with shopkeepers?

8. What is meant by the "Incidence of Taxation?"

   Illustrate your answer by a consideration of the incidence of a tax on ground-rents.

9. Write a short essay on Bi-metallism.

ANNUAL EXAMINATION.

JURISPRUDENCE.

Examiner: Hon. J. A. Tole, B.A., LL.B., Barrister-at-Law.

1. When and why would an order prohibiting the exportation of corn, be a law *(a)* according to Austin, *(b)* according to Blackstone?

2. Criticize the proposition that "The end of every Government is to institute and protect property."

3. Illustrate *Officium* and *obligatio* by the case of a breach of servitude.

4. Trace the meanings of Creditor, Obligor, Reus.

5. What is the distinction between a Tort and a Crime *(a)* according to Austin, *(b)* according to Blackstone?

6. In what different lights may the right to personal security be viewed?

7. State concisely the different meanings given to "Equity," and state also the resemblances and differences between Roman and English Equity.

8. How should a judge be guided in the interpretation of a new Statute?

9. State the "Suggesting Causes" of Judiciary Law which have had the most weight in England, and why?

10 Explain Substantive and Adjective Law.

11. How do you account for the fact that in England so much has been left to the oblique legislation of the Bench?

ANNUAL EXAMINATION.

CONSTITUTIONAL HISTORY.

Examiner: Hon. J. A. Tole, B.A., LL.B., Barrister-at-Law.

1. What did Lord Chatham call "The Bible of the English Constitution?"

2. Give some account of "Frankpledge," "Curia Regis"—Parliamentary Representation.

3. Trace the history of the right of taxation from Saxon times to the accession of Charles I.

4. Compare the progress of the constitution under the later Plantagenet Kings with that under the Tudors.

5. What do you know of the following:—Prerogative of Purveyance—Bushell's case, and the case of Stockoale *v.* Hansard?

6. State the origin and value of Trial by Jury and Writ of Habeas Corpus.

7. What is the argument for *(a)* the Crown's right to create life Peers, *(b)* for their right to sit in the House of Lords?

8. Define Party Government. State its origin and the objections to it.

9. What was the party known in George III.'s reign as "The King's men," or "The King's friends?"

10. What is the mutiny Act? Why is it passed annually?

11. Discuss the adaptation of the English Constitution to the English people at the present time.

ANNUAL EXAMINATION.

ALGEBRA.

Examiner: PROFESSOR SEGAR.

1. Simplify $(s-a)^3+(s-b)^3+(s-c)^3-s^3$ where $s=\frac{1}{2}(a+b+c)$, and also

$$\frac{(s-a)^3+(s-b)^3+(s-c)^3}{(s-a)(s-b)(s-c)}$$

where $s=\frac{1}{2}(a+b+c)$.

2. Solve the equations

(i.) $(x+a)(x+b)(x+c)=(x+a+b+c)^3$,

(ii.) $x^4-9x^2+20=0$.

Also find which of the equations

$$\pm\sqrt{x+4}\pm\sqrt{x+11}\pm\sqrt{x+44}=0$$

can be solved and their solutions.

3. Prove that $(a^m)^n=a^{mn}$ is true for all values of m and n.

Divide $a^2+2a-16a^{-2}-32a^{-3}$ by $a^{\frac{3}{2}}-8a^{-\frac{3}{2}}+4a^{-\frac{1}{2}}-2a^{\frac{1}{2}}$.

Find the condition that $x+\sqrt{y}$ may have a square root of simple form.

4. Prove the identity of the algebraical and geometrica definitions of proportion.

If $\frac{a}{b}=\frac{c}{d}=\frac{e}{f}$, find a fraction containing only b, d, f and equal to

$$\frac{(a^2+c^2)(e^2+c^2)}{a^4+c^4+e^4}.$$

If $px+qy+rz=0$ and also $\frac{q-r}{x}=\frac{r-p}{y}$, then each of these fractions is equal to $\frac{p-q}{z}$.

5. Sum the series

(i.) $a, a + d, a + 2d, \ldots\ldots, a + nd$;

(ii.) $1, -\sqrt{3}, 3, -3\sqrt{3}, \ldots\ldots, \pm 81$;

expressing the answer to the latter in decimal form.

6. Find the number of ways in which n things may be arranged among themselves, taking them all at a time, when p of the things are alike of one kind, q of them alike of another kind, and so on.

Out of 4 books on poetry, 6 on science, 3 on travels, and 2 on history, in how many ways can I give one each to two of three students and two to the third, the books so given being all on different subjects?

7. Find the sum of the coefficients in the expansion of $(1 + x)^n$. What is the equivalent theorem respecting combinations?

Expand $(1 + a + a^2)^6$ to six terms.

Find approximately the value of $\sqrt[5]{242}$.

8. State and prove a rule which will enable us to ascertain at sight the characteristic of the logarithm of a given number.

Given $\log 2 = \cdot 3010300$ and $\log 3 = \cdot 4771213$, find the powers of 10 most nearly equal to $\left(\frac{27}{25}\right)^{600}$.

ANNUAL EXAMINATION.

GEOMETRY AND TRIGONOMETRY.

Examiner : PROFESSOR SEGAR.

1. Prove the complete converse to Euclid I. 5, using no proposition occurring later than I. 4.

2. If a straight line is bisected and produced to any point, the sum of the squares on the whole line thus produced, and on the part produced, is twice the sum of the squares on half the line bisected and on the line made up of the half and the part produced.

   Produce a line so that the sum of the squares on the whole line thus produced and on the part produced may be equal to three times the square on the given line.

3. If a straight line touch a circle, and from the point of contact a straight line be drawn cutting the circle, the angles which this line makes with the line touching the circle shall be equal to the angles which are in the alternate segments of the circle.

   A line AD is drawn bisecting the angle A of a triangle ABC and meeting the side BC in D. Find a point E in BC produced either way such that the square on ED may be equal to the rectangle contained by EB and EC.

4. If two triangles be equiangular to one another, the sides about the equal angles shall be proportionals, those sides which are opposite to equal angles being homologous.

   A chord passes through a point of intersection of two circles, and is terminated both ways in two other points on the circles; show that the line joining its middle point to the other point of intersection of the two circles is proportional to the chord.

5. If four straight lines are proportionals, the rectangles contained by the extremes is equal to the rectangle contained by the means.

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On a given base describe an isosceles triangle, equal in area to a given rectangle.

6. Find the relation between the numbers of degrees, grades, and radians in the same angle.

A regular polygon has fifty-four sides; express the difference between one of its angles and two right angles in the three standard systems of angular measurement.

7. Find a formula for all the angles having their tangents equal to tan a.

Solve the equation

$$\frac{\cos 2\theta}{1 - \sin 2\theta} = \frac{\sqrt{3} + 1}{\sqrt{3} - 1}.$$

Given the magnitude of any angle represented by two lines meeting at a point, what other angles may be represented by the same figure?

8. Prove the formula

$$\sin (A - B) = \sin A \cos B - \cos A \sin B,$$

and deduce from it

$$\tan \frac{A}{2} = \frac{\sin A}{1 + \cos A}.$$

Prove also that

$$1 - \tan^2 A \tan^2 B = (\cos^2 B - \sin^2 A) \sec^2 A \sec^2 B.$$

9. In a triangle, with the usual notation, prove

(i.) $\cos \frac{A}{2} = \sqrt{\frac{s(s-a)}{bc}}$;

(ii.) $2R = a \operatorname{cosec} A = b \operatorname{cosec} B = c \operatorname{cosec} C$;

(iii.) $a \cos A + b \cos B + c \cos C =$
$4R \sin A \sin B \sin C.$

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10. Solve the triangle whose sides are 2, 3, 3; and also the triangle whose sides are 4, 3, 3; having given—

$$\text{L tan } 19^\circ\ 28' = 9{\cdot}5483452,$$
$$\text{L tan } 19^\circ\ 29' = 9{\cdot}5487471,$$
$$\text{L tan } 24^\circ\ 5' = 9{\cdot}6502809,$$
$$\text{L tan } 24^\circ\ 6' = 9{\cdot}6506199,$$
$$\log 2 = {\cdot}3010300.$$

ANNUAL EXAMINATION.

APPLIED MATHEMATICS.

Examiner : PROFESSOR SEGAR.

1. Explain how variable velocity is measured. State and prove the more important facts relating to the vertical motion of a body under gravity. A body is thrown vertically upwards with a velocity of 150 feet a second ; through what distance does it move during each successive second while it is rising ?

2. Find the acceleration of two weights connected by a string which passes over a smooth peg.

   A shot is fired with a velocity of 1,800 feet a second from the top of a building 80 feet high ; at what distance from the building will the shot reach the ground ?

3. State and prove the theorem known as the Triangle of Forces. Forces are represented completely by three sides of a parallelogram taken in order; find their resultant.

4. Show that the algebraical sum of the moments of two parallel forces about any point in their plane is equal to that of their resultant about the same point. Explain clearly what is meant by the centre of a number of parallel forces.

   Like parallel forces of 7, 8, 9, 10 units respectively act at the four corners of a square whose side is 6 inches, and an opposite force of 12 units acts at its centre ; find the distances of the centre of these parallel forces from the sides of the square.

5. Shew how to find the centre of gravity of a part of a body having given the weight and the centre of gravity for the whole body and for the remaining part.

ANNUAL EXAMINATION.

A circular lamina has a radius of 1 foot, and a portion is taken out of it having the form of an equilateral triangle with one vertex at the centre of the circle and the other two on the circumference; find the centre of gravity of the remainder.

6. Prove that any number of forces acting in any manner in a plane can be reduced to a single force or a couple unless they are in equilibrium.

Hence deduce tests for finding whether any given system of forces is equivalent to a single force.

7. Prove that the difference between the pressures at two points in a homogeneous liquid at rest is proportional to the distance between the horizontal planes passing through them.

If a circular tube of a small uniform bore and in a vertical plane is filled with equal volumes of three liquids, and one of the surfaces of separation rests in the same horizontal plane as the centre of the circle, shew that the density of one of the liquids is an arithmetical mean between the densities of the other two.

8. Show how to find the magnitude of the resultant pressure of a liquid on a plane area.

A cubical box of which the edge is 1 foot is half filled with water; 10lbs. of a substance of specific gravity 3·7 is then suspended, totally immersed in the water, by a string; what is the total pressure of the liquid on one of the sides of the box?

9. Show how to apply the Hydrostatic Balance to find the specific gravity of a solid whose density is less than that of water.

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A diving bell, weighing 10 tons, of length 8 feet, made of material of specific gravity 7, and which could contain as much as 35 tons of water, is made to sink mouth downwards by heavy weights; find at what depth the bell would remain in equilibrium after releasing the weights?

ANNUAL EXAMINATION.

CONIC SECTIONS.

Examiner: Professor Segar.

1. The line joining the focus of any conic, to the point where any diameter meets the corresponding directrix, is perpendicular to the chords which are bisected by that diameter.

2. If the chord of intersection, PQ, of an ellipse or hyperbola with the circle of curvature at P, meet CD, the semi-diameter conjugate to CP, in K, then $PQ \cdot PK = 2 \cdot CD^2$.

3. Any chord of a rectangular hyperbola subtends, at the ends of any diameter, angles which are equal or supplementary.

4. Find the general polar equation of a straight line, and also the polar equation of a straight line passing through two given points.

   Given the polar co-ordinates of the four corners of a quadrilateral, find those of the point of intersection of the diagonals.

5. Find the equation of a system of circles every pair of which has the same radical axis.

   Find a point such that its polar is the same for every circle of the system. How many such points are there?

6. Shew that the locus of the middle points of a system of parallel chords of a parabola is a straight line parallel to the axis of the parabola.

   Find also the locus of the middle points of chords of a parabola which pass through a given fixed point.

7. Find the equation of the tangent at any point of the hyperbola whose equation is $xy = c^2$.

Shew that the equation may be put in the form $y=mx+2c\sqrt{-m}$; hence shew that if two tangents to a rectangular hyperbola be such that the product of the tangents of their inclinations to one of the asymptotes be constant, the locus of their point of intersection is a diameter of the hyperbola.

8. Find the equation of the axes of the conic represented by the general equation of the second degree.

Trace the conic,

$$(3x+4y)^2-8x+156y-36=0.$$

9. Find the locus of the pole of a given line with respect to a system of confocals.

Two central conics are confocal; find the locus of the poles of the tangents of one with respect to the other.

10. Shew that the equation of a conic may be put in the form

$$\sqrt{Lx}+\sqrt{My}+\sqrt{Nz}=0$$

where x, y, z are the distances of any point on the conic from three straight lines.

If the conic becomes a circle, what does the equation become?

ANNUAL EXAMINATION.

EXPERIMENTAL PHYSICS.

Examiner: PROFESSOR F. D. BROWN.

1. Define a *dyne*, an *erg*, a *field of force*, and a *unit magnet pole*. Find the strength of the field close to the middle of a thin bar magnet 12 inches long whose poles have a strength 6.

2. How would you propose to measure the absolute strength of the poles of a magnetised knitting needle, assuming the local value of the horizontal intensity of the earth's magnetism to be known?

3. What rules should be observed in making a steel horse-shoe magnet of given weight so that the armature may adhere as strongly as possible?

4. An electroscope and a large insulated metal bell are placed at some distance apart, connected with a wire, and a small charge of electricity communicated to them. The bell is then placed over the electroscope without removing the wire or impairing the insulation of the bell. What will be the final condition of the gold leaves? Give reasons for your answer.

5. Define the term *capacity* as applied to a conductor and find an expression for the capacity of a spherical condenser with air as the dielectric. How will this expression be modified if the air be replaced by a dielectric of specific inductive capacity K.

6. Describe Lord Kelvin's quadrant electrometer and explain its use.

7. What is an ohm and what is meant by the specific resistance of a material? Show that, if a galvanic cell of small resistance be connected up with a high resistance galvanometer the deflection will remain the same when the galvanometer is shunted.

ANNUAL EXAMINATION.

8. What is meant by a *watt*. If 10 secondary cells of E.M.F. 2 volts and internal resistance 0·1 ohms be arranged in a series and the terminals of the battery be connected with a wire of 1 ohm resistance find the energy expended in the wire in ten minutes and the quantity of heat evolved.

9. Give some account of the characteristic curves of dynamos. What type of machine would you select for charging a battery of accumulators? Give explicit reasons for your answer.

ANNUAL EXAMINATION.

CHEMISTRY.

Examiner: PROFESSOR F. D. BROWN.

1. Under what circumstances is the evolution of oxygen gas accompanied by that of ozone? Describe some form of apparatus by means of which oxygen may be partially converted into ozone.

2. In what respects are the properties of the halogen elements modified as their atomic weights increase?

3. How is sulphur dioxide usually prepared in the laboratory? The solution of this gas in water is generally assumed to contain sulphurous acid. Write down the formula for this substance and give reasons for the assumption that it exists in aqueous solution.

4. Describe the preparation of marsh gas. What are the specific gravities of this gas referred to air and to hydrogen respectively? How would you find out whether a given specimen of marsh gas contains hydrogen?

5. How would you prepare sodium metaphosphate from bone ash?

6. A solution contains copper, arsenic, and tin; how would you separate these substances?

7. Write down the formulae of the oxides of lead, and state how each of them can be obtained from metallic lead. What other metals do you regard as most nearly allied to lead, and why?

8. What is the composition of the following minerals:—Opal, bauxite, steatite, corundum, malachite, blende, cinnabar, witherite, talc.

9. What are the chief sources of potash salts? If you were given a quantity of potassium sulphate how would you prepare potassium chlorate from it?

10. Give a brief account of the ores of iron and of the metallurgy of this metal.

ANNUAL EXAMINATION.

BIOLOGY.

Examiner: PROFESSOR THOMAS.

(Medical Students are requested to answer questions in Sections I., II., and IV; but must not attempt more than eight questions altogether, nor more than three in any one section. Other Students are requested to answer questions in Section I. and one other Section only. Only four questions to be attempted in one Section.)

I.—GENERAL BIOLOGY.

1. Compare and contrast a typical animal with a typical vegetable cell. Give an account of the chief methods of cell reproduction.

2. What do you understand by the differentiation of tissues. Give the more important characters of the following tissues:—epithelium, striated muscle, cartilage, sclerenchyma, cambium.

3. Compare and contrast the modes of nutrition seen in (a) *Spirogyra*, (b) Yeast, (c) Rabbit.

4. Explain fully the term "adaptation to the environment." Give examples showing the adaptation of both plants and animals to their environment. What bearing have the facts you mention on the origin of species?

5. Explain and illustrate the terms commensalism, degeneration, vestigial, metamorphosis.

II.—JUNIOR BOTANY.

1. Describe the various organs by which the climbing of plants may be effected, and explain their morphological nature.

2. Describe and give examples of the chief forms of spurious fruits, explaining the morphological nature of the parts concerned. Show how the characters of the fruits you mention are related to the mode of distribution of the seeds.

3. Write an account of an open fibro-vascular bundle in any dicotyledon; describe the various structural elements and show how they are formed from meristem.

4. Give an account of the minute structure of the foliage-leaf of any flowering plant. What are the functions of the foliage leaves, and how are they related to, or dependent upon, the structure you describe?

5. What modifications do the following flowers present which may be regarded as related to their respective modes of fertilisation:—Cornflower, Quince, Aconite, Violet, Salvia, Oats? To what natural order do these flowers belong?

III.—Senior Botany.

1. Compare and contrast the modes of reproduction seen in *Mucor*, *Vaucheria*, any red seaweed.

2. Give an account of the alternative of generations in the Liverwort. In what important respects does the Liverwort differ from (*a*) the Algae, (*b*) a Fern.

3. Describe the formation of the sporangia and spores in a Fern. What are the corresponding organs in an Angiosperm? Describe their development.

4. Describe fully a fibro-vascular bundle in any Monocotyledon and compare with the fibro-vascular bundle of a Fern.

5. Give an account of the cortex of any dicotyledonous tree and show how it is formed.

IV.—Zoology.

1. Give an account of the alternation of generations as seen in *Taenia*.

2. Compare *Amoeba*, *Hydra*, and the Earthworm with regard to the degree of morphological differentiation shown by them.

3. Compare and contrast *Amphioxus* with any fish with which you are acquainted.

4. Give an account of the structure of any simple Ascidian. On what grounds are the Ascidians said to be degenerate?

5. Compare the structure of the organs of circulation in a fish, a frog, and a mammal.

ANNUAL EXAMINATION.

GEOLOGY.

Examiner: PROFESSOR THOMAS.

1. Show how the principle of symmetry may be used in the classification of crystals. What are hemihedral forms. Describe the hemihedral forms in which some common minerals occur.

2. What is the difference between (a) essential, (b) accessory, (c) secondary constituents in igneous rocks? Give examples of each, and account for the presence of (c).

3. Give an account of the deposits which may accumulate in the sea in relatively shallow water. Show how the character of the deposits may be affected by (a) nature of rocks on the neighbouring land, (b) currents, (c) proximity of large rivers.

4. Explain the following terms, and give sections illustrating them:—overlap, thrust-plane, dip-fault, escarpment, dip-slope, laccolite, ontlier.

5. Describe and explain the origin of the chief kinds of mountains, giving sections which illustrate your answer. How can the age of a mountain range be ascertained.

6. What do you understand by homotaxis? What bearing has the geographical distribution of plants and animals upon geology?

7. Draw a section across Great Britain through Snowdon, either to the E. or to the S.E., showing the general arrangement of the different formations, and the way in which they affect the contour of the ground.

8. What do you understand by regional metamorphism, and how does it differ from local metamorphism. Describe some district of regional metamorphism.

9. Give the characteristic features of the following fossils, and mention their range in time:—Favosites, Pentremites, Cephalaspis, Calamites, Mastodonsaurus, Clymenia, Cyrtoceras, Phenacodus, Pterophyllum, Eurypterus.

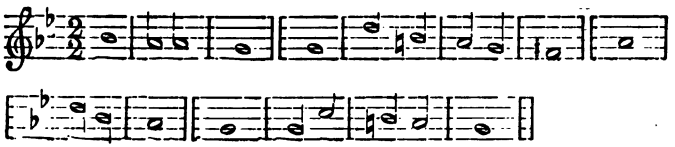
ANNUAL EXAMINATION.

MUSIC (Senior A.)

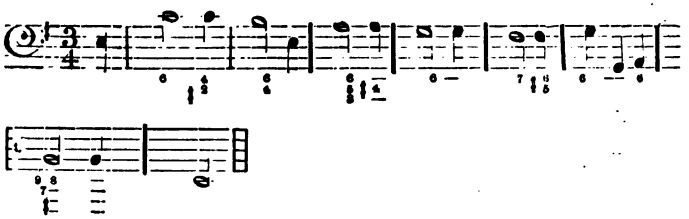
Three Hours.

Harmony.

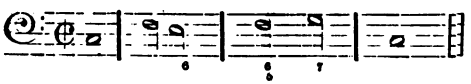
1. Harmonize the following chant:—



2. Fill up the following Bass in four parts:—



3. Fill up the following Bass in five parts, using short score:—

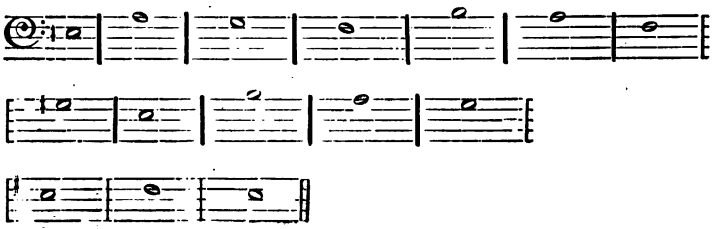


Counterpoint, Canon and Fugue.

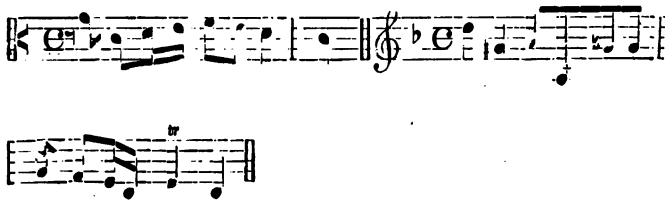
1. Give a list of consonant intervals available in counterpoint. Say which are termed perfect, and which are imperfect.

ANNUAL EXAMINATION.

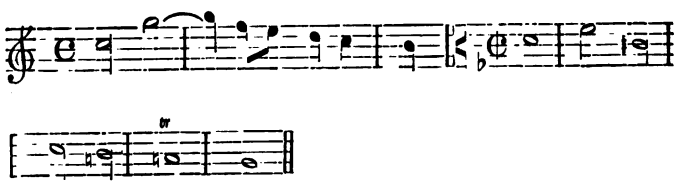
2. Add above the following C. F. a part for alto and tenor in first species (three parts).



3. Give answers to the followidg subjects, and state which are "real," and which are "tonal."



4 Give the subjects to precede the following answers.

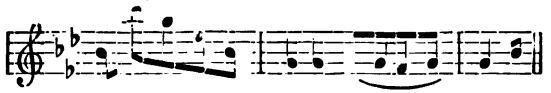


5. Write the first four bars of "Home, Sweet Home," and add a counterpoint in the fifth species below.

ANNUAL EXAMINATION.

INSTRUMENTATION.

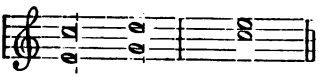
1. Write the following passage for the Clarionette most commonly used in that key.



2 (a) In what key are Horn parts always written?

(b) Which are the crooks most frequently used?

(c) Write the following passage for the different crooks used.



3. Give the compass of:—

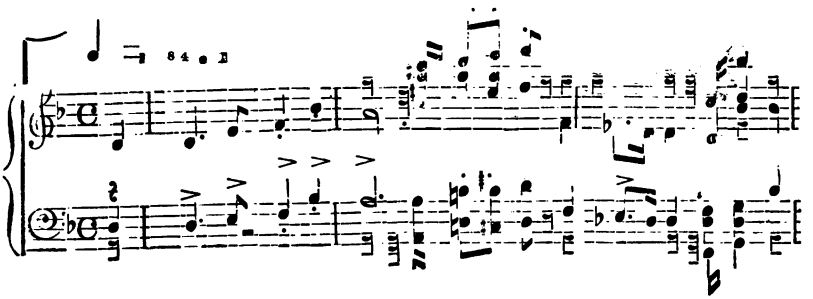
(a) The Violin

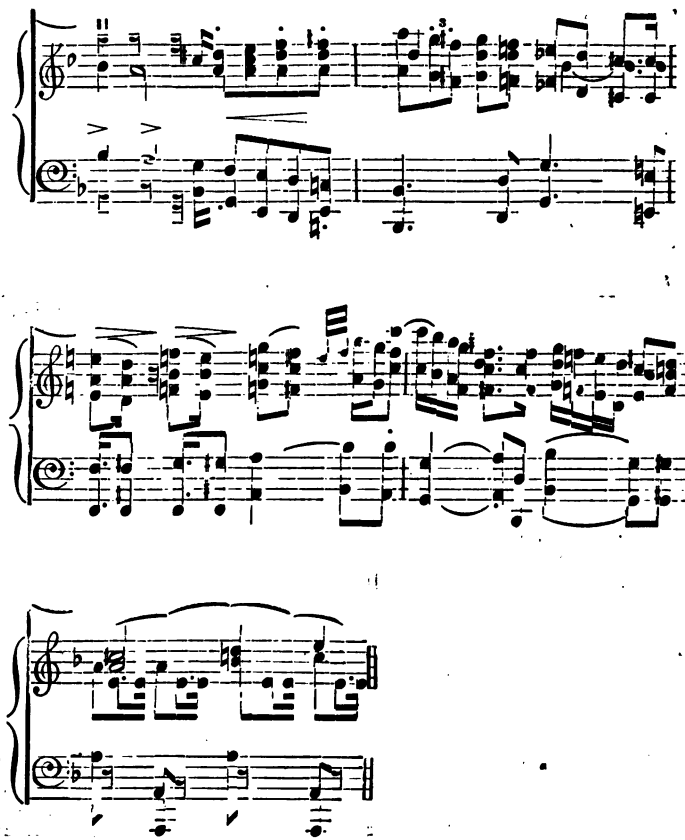
(b) The Viola

(c) Cello

(d) Double Bass.

4. Arrange the following extract for full Orchestra:—





ANNUAL EXAMINATION.

MUSIC (Senior B).

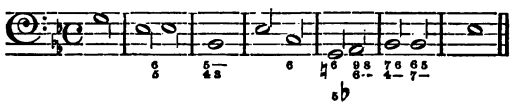
Three Hours.

Harmony.

1. How is a discord by suspension produced, and at what part of the bar does it appear? Give an example.

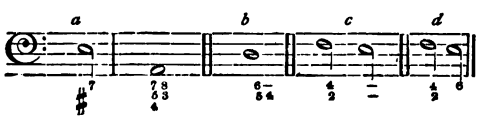
2. Name the chords derived from the dominant $^9_7$ and give an example of each.

3. Harmonize the following bass, using the treble, alto, and tenor clefs.

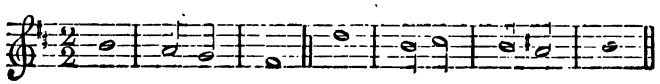


4. Mention the chief forms of embellishment used in pianoforte music. Show the signs used to indicate them, and also how they are played.

5. Fill in the chords indicated by the following figures. Should any combination require preparation or resolution precede or follow it by suitable chords? Show the root of each discord on a separate stave.



6. Harmonize the following chant in four parts (short score).

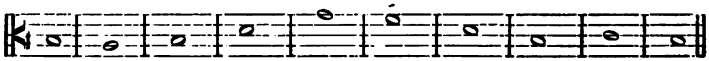


ANNUAL EXAMINATION.

COUNTERPOINT.

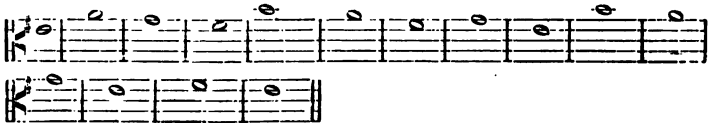
1. Say what the following will become when inverted:—
   (a) *a* minor 13th
   (b) *a* major 11th
   (c) *a* major 9th

2 Add a counterpoint of the fifth species above the following C.F.



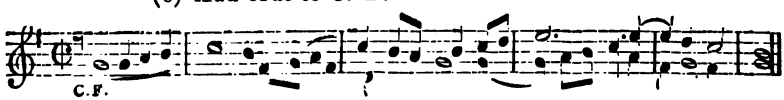
3. Transpose the above subject into the key of C minor. Add parts for Bass and Treble each in the third species (three parts).

4 Add a counterpoint of the fourth species (two parts), above the following C. F.



5. Ment on a peculiar practice among old masters in their endings of compositions in minor keys, and suggest an explanation of the custom.

6. To the following example add
   (a) 6ths to counterpoint
   (b) Invert question A
   (c) Add 3rds to C. F.

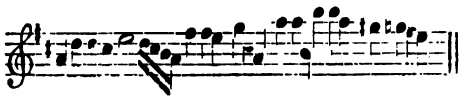


ANNUAL EXAMINATION.

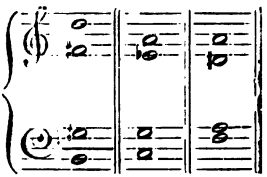
JUNIOR DIVISION.

Time—Three Hours

1. Add bar lines to the following extract :—



2 Resolve the following discords .—



3. Modulate from the key of C into all of its attendant keys

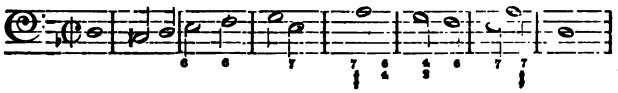
4 On the note of F♭ give examples of the different forms of the augmented sixth ; name each form and resolve them.

5. If the root be omitted from the dominant 7, what chords would be the result in the major and minor keys? Give an example of each.

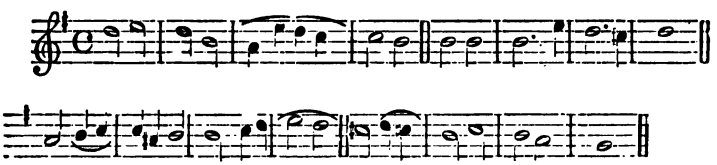
6. In the key of A♭ write one example of the Neapolitan 6th, Diminished Triad, Added 6th.

7. Modulate from the key of A Minor to C Major, and (secondly) to G Major.

8. Add three upper parts to the following bass. Use dispersed harmony.



9. Harmonize the following melody:—



10. Give the Italian equivalent for the following directions:—
Very soft, increase in speed, hold.

11. Give an example of an augmented major and minor second

History of Music.

1. From what nation is it supposed the Greeks originally derived the rudiments of their musical knowledge.

2. Name one of the most prominent of the Greek theorists

3. Give a complete list of the authentic and plagal modes; who arranged the first and who arranged the second?

4. Give the name of the music-loving Emperor; when did he live, and where did he establish an excellent school of music?

5. Who effected many important improvements in the system of notation, and what did he accomplish?

6 Who formulated a system of musical measure and time by varying the shape of a note to denote its comparative length?

7 What is Marchettus of Padua accredited with?

8. Give the name and date of the principal inaugurator of the Belgian School.

ANNUAL EXAMINATION.

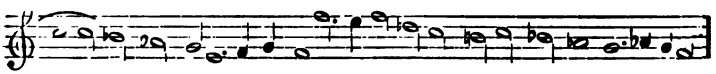
MUSIC. (MATRICULATION DIVISION.)

Time – Three Hours.

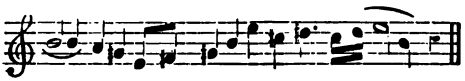
1. What is a tetrachord? Write the upper half of the scale of F minor, in two forms.

2. Define:—Accelerando, Adagio, Con Sordino.

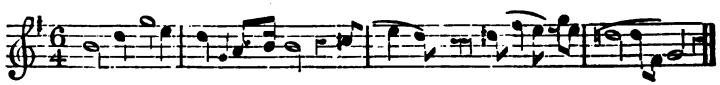
3. Transpose the following passage into the Tonic major, adding bar lines and time signature.



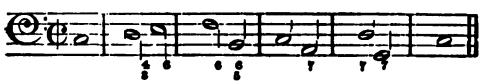
4 Add bar lines, time signature, and key signature to the following:—



5. Re-write the following melody in $\frac{6}{8}$ time.



6. Add three upper parts to the following bass:—



7. What is a Triad? Write the different kinds of Triads over the note F.

8. Give an example of the dominant seventh and resolve it.

9. How many inversions are in the dominant seventh? Write the figures of each inversion. Give examples.

History of Music.

1. When was the first singing school established in Rome?

2. What did St. Ambrose do for Church music, and when did he live?

3. Give a list of the authentic and plagal modes as arranged by St. Gregory.

4. What was the important advance in the art of musical composition, and who effected it?

5. Who introduced the "Madrigal?"

6. What was "The Virginal Book," and for whom was it written?

7. Give a short account of Thomas Tallis.

8. Name the composer who first introduced instrumental accompaniments in Church music.

SINCLAIR AND GILLIES SCHOLARSHIPS EXAMINATION, 1895.

MATHEMATICS.

1. Shew that if a straight line be bisected, and also divided internally or externally into two unequal segments, the squares on the unequal segments are together double the sum of the squares on half the line, and on the line between the points of section.

   Divide a given straight line into two parts, so that the rectangle contained by them may be equal to the square described on a given straight line, which is less than half the straight line divided.

2. The opposite angles of any quadrilateral inscribed in a circle are together equal to two right angles. In what propositions does Euclid make use of this result?

   If from any point o in the circumference of a circle perpendiculars be drawn to the four sides, and to the diagonals of an inscribed quadrilateral, the rectangle contained by the perpendiculars on either pair of opposite sides is equal to the rectangle contained by the perpendiculars on the diagonals.

3. The rectangle contained by the diagonals of a quadrilateral inscribed in a circle is equal to the sum of the two rectangles contained by the opposite sides.

   In a quadrilateral inscribed in a circle, the rectangle contained by the sides meeting in one vertex is to that contained by the sides meeting in the opposite vertex, in the ratio of the perpendiculars drawn from those vertices to the diagonal joining the other two.

SINCLAIR AND GILLIES SCHOLARSHIPS EXAMINATION.

4. Find the square root of

$$(bc + ca + ab)^2 - 4abc(c + a);$$

and the cube root of

$$b^2(a-b)(c-b)\left\{(a-b)^2 + (c-b)^2\right\} - ab^2c$$
$$(a^2 + c^2) + b^6(a - b + c).$$

5. Solve the equations

$$(a)\quad x^2 + xy - 6y^2 = 0,$$
$$x^2 + 8y^2 = 250;$$

$$(b)\quad \sqrt{x-7} \pm \sqrt{x-12} \pm \sqrt{x+9} = 0.$$

Given that y is a quadratic function of x whose values are 4, 1, 4 when $x = 1, 2, 3$, respectively; find the relation between x and y.

Shew also that y is never less than unity.

6. Establish the identity of the Algebraical and Euclidean definitions of proportion.

If x, y, z, w be in continued proportion shew that

$$(a-b)^2 + (c-d)^2 + 2(a-d)^2 + (a+b+c+d)^2$$
$$= 4(a^2 + b^2 + c^2 + d^2).$$

7. Prove the formula for the number of permutations of n things, r together.

Shew that the product of any r consecutive integers is divisible by $\lfloor r$.

How many words can be formed containing the nine letters Epictetus? In how many of these do two t's occur in succession?

SINCLAIR AND GILLIES SCHOLARSHIPS EXAMINATION.

8. Prove the formula

$$\cos(A - B) = \cos A \cos B + \sin A \sin B.$$

If $A + B + C = 90°$, shew that

$$\frac{\sin A + \cos B - \sin C}{\sin A + \cos C - \sin B} = \frac{1 + \tan \frac{1}{2} B}{1 + \tan \frac{1}{2} C}.$$

Also prove

$$\left\{1 + \tan^2 \theta\right\} \sin\left(\frac{\pi}{4} - \theta\right) \left[1 + 2\cos^2\left(\frac{\pi}{4} - \theta\right)\right]$$
$$= \left\{1 - \tan^2 \theta\right\} \cos\left(\frac{\pi}{4} - \theta\right) \left[1 + 2\sin^2\left(\frac{\pi}{4} - \theta\right)\right]$$

9. Prove the formula

$$\tan \frac{A - B}{2} = \frac{a - b}{a + b} \cot \frac{C}{2}.$$

Express

$$\frac{a \cos^2 \frac{A}{2} + b \cos^2 \frac{B}{2} + c \cos^2 \frac{C}{2}}{a + b + c}$$

in terms of the sides.

If, in an acute-angled triangle, we have

$$\cos 4A + \cos 4B + \cos 4C + 1 = 0.$$

then one angle must be 45°

EXAMINATION FOR SINCLAIR SCHOLARSHIP, 1895.

PHYSIOLOGY.

Candidates are requested to illustrate their answers with rough diagrams where possible.

1. Give an account of the different kinds of corpuscles seen in the blood, and state what you know of their origin and functions.

2. Describe the structure of an artery. What differences exist between the flow of blood in an artery and in a vein? Explain these differences fully.

3. Describe the structure of the liver. What materials does the liver receive by the blood, and what changes does it produce in them?

4. Describe the structures seen in a transverse section of the spinal cord. What do you know of the functions of the cord?

5. Give an account of the structure and relations of the medulla oblongata. What nerves arise from it, and to what parts are they distributed? What are its functions?

6. Describe the appearance presented by a typical section of the retina. Explain how vision is related to the structures you describe. In what part of the retina may divergences from this typical structure be seen, and how do they affect vision?

7. What is the sympathetic nervous system, and what are its functions?

8. What are the digestive ferments, and how are they produced? What changes do they give rise to, and why are such changes necessary?

9. What are the chief waste substances of the body? In what parts are they produced, and where and how are they eliminated?

EXAMINATION FOR SINCLAIR SCHOLARSHIP, 1895.

PHYSICAL GEOGRAPHY.

1. What are the causes of atmospheric and oceanic circulation?

2. Trace the course of any typical great river of the world, giving the physical characters of the different parts of its course. Compare with this the course of any large river in New Zealand.

3. Draw a rough outline map of New Zealand, describe the character of the coast, and explain what the more prominent features of the outline are due to. Indicate the chief areas of low-lying or level country.

4. Write an account of the chief circumstances that influence climate.

5. Write a general description of the Pacific Ocean. Describe the character of some of the more important oceanic islands of the Pacific, and state their mode of origin.

6. Give an account of the chief types of mountains found on the globe. What do you know of their structure and origin?

7. What is the form of the earth, and how is it ascertained?

8. Give an account of a basin of inland drainage.

9. Describe and explain the following:—Canon, Harbour Bar, Fiord, Ecliptic, Steppe, Mercator's projection.

EXAMINATION FOR SINCLAIR SCHOLARSHIP, 1895.

BOTANY.

Candidates are requested to illustrate their answers with rough diagrams where possible.

1. State fully what you know of the nature, composition, and distribution of chlorophyll. Give a brief account of the evidence as to its function.

2. In what parts of plants and in what form may reserves of food be stored in plants? What is the source of the reserve materials and how are they conducted to the parts in which they are stored. Give examples.

3. Describe the character of the cambium of a fibro-vascular bundle in any dicotyledon, and show how it gives rise to the permanent tissues.

4. Write an account of the yeast plant, and explain the character of the fermentation which it causes. What do you know of other organisms which give rise to analogous changes in organic substances.

5. Compare and contrast Spirogyra and Mucor with regard to structure, reproduction, and mode of nutrition.

6. Compare the mode of reproduction in the fern with that of any angiosperm. State what you know of any plant in which the mode of reproduction is intermediate in character.

7. What do you understand by a fruit. On what principles are fruits usually classified? Shew how far the characters of fruits are related (*a*) to the protection of the embryo, (*b*) the dispersal of seed. Give examples.

8. Describe the flower and fruit of any four of the following, and point out the characters by which you are enabled to refer them to their respective natural orders:—Dock, oats, snapdragon, marigold or thistle, bramble, mallow, columbine or larkspur.

9. Give an account of the characters frequently found in flowers fertilised (*a*) by wind, (*b*) by agency of insects. Give examples.

GILLIES SCHOLARSHIP, 1895.

CHEMISTRY.

1. A sample of nitrogen gas is suspected to contain a little oxygen. How would you ascertain if it does, and how would you purify the nitrogen if it is found to be necessary?

2. Give an account of the chemical properties of carbon monoxide and describe a method by which this gas may be conveniently prepared.

3. How is bromine obtained on a large scale? By what means is it separated from any chlorine which it may contain?

4. Give a brief description of the hydrides and chlorides of phosphorus and antimony, showing the points of similarity and of contrast.

5. Is magnesium most nearly allied to calcium or to zinc? Discuss this question.

6. Mention the chief minerals containing chromium and explain how bichromate of potash is obtained from any one of them.

7. How would you separate the iron from the manganese in a solution containing the chlorides of these elements?

8. How would you prepare pure silver
   (*a*) from an alloy of silver and lead;
   (*b*) from an alloy of silver and copper.

9. What is meant by the term "equivalent" in chemistry? Draw a careful distinction between equivalents and atomic weights.

GILLIES SCHOLARSHIP, 1895.

MAGNETISM AND ELECTRICITY.

1. What is a unit magnet pole? A magnet pole of strength 10 is placed at each of two corners of an equilateral triangle, a side of which is 8 centimetres long. Find the intensity of the magnetic field at the third corner.

2. Define the term "moment of a magnet," and explain how you would compare the moments of two bar magnets of the same dimensions.

3. How would you proceed to find out the magnetic declination at the place where you live?

4. Two insulated brass balls of radii one and two centimetres respectively, are simultaneously charged from a large conductor, and are then removed to a distance and placed 10 centimetres apart. Make a sketch, of as accurate a character as you can, of the lines of force in the resulting electric field.

5. What do you understand by the "capacity" of a condenser. In what way does the capacity of a spherical condenser vary with its dimensions and with the materials of which it is constructed?

6. Define the electromagnetic unit of current. If a unit magnet pole were placed at the centre of a circle of 40 centimetres in diameter, what current would be required in order to act on the pole with a force of 4 dynes?

7. Describe the construction of the sine galvanometer, and show that the sine of the angle of deflection is proportional to the deflecting current.

8. Explain the construction of a Leclanché cell, and mention the uses for which it is best adapted, giving reasons for your answer.

9. Find the heat developed in a wire whose resistance is 10 ohms by a current of 10 amperes in 10 minutes.

10. Given a galvanic cell, a resistance box and a tangent galvanometer of known resistance, could you determine the internal resistance of the cell, and if so, how would you do it?

GILLIES SCHOLARSHIP EXAMINATION, 1895.

MECHANICS.

1. State and prove the parallelogram of velocities.

   A ship is driven by its steam power towards the N. with a velocity of 18 miles an hour; by a current towards the N.E. with a velocity of $\sqrt{2}$ miles an hour; and by wind towards the E. with a velocity of 440 yards an hour. Find the number of miles an hour in the actual velocity of the ship.

2. Prove the equation $s = \frac{1}{2} a t^2$.

   Explain clearly how to find the acceleration of a particle moving under gravity down an inclined plane.

   An equilateral triangle is in a vertical plane and has its base horizontal; compare the times taken by two particles to fall from rest, one down one of the sides, and the other down the vertical perpendicular of the triangle.

3. State and prove the triangle of forces.

   A particle of mass m suspended by a string is drawn aside by a horizontal force so that the string is inclined to the vertical at an angle 30°; find the magnitude of this force.

4. Define clearly the meaning of the centre of a system of parallel forces.

   Given the distances from a given line of the points of application or each of a set of parallel forces in one plane, find the distance of their centre from the given line.

GILLIES SCHOLARSHIP EXAMINATION.

Shew that if parallel forces act at the vertices of a triangle and are proportional to the opposite sides, their centre is the centre of the inscribed circle.

5. Shew that the centre of gravity of a uniform triangular lamina is identical with that of three equal particles placed at the vertices.

Find the centre of gravity of a piece of uniform wire bent into the form of the perimeter of a triangle.

6. To which system of pulleys does the relation, $P = 2^{n-1} W$, between the power and weight, belong? Prove this relation for that system and state the corresponding results for the other standard systems.

Verify the principle that what is gained in power is lost in displacement for any one of these systems.

7. If n forces acting at a point be represented by straight lines drawn from that point, shew that the n-th part of the resultant is represented by the line joining that point to the centre of gravity of n equal particles placed at the other ends of the lines.

Show that if four forces be represented by the straight lines joining one of the vertices of a regular pentagon to the other four, then the fifth part of the resultant is represented by the radius of the circumscribing circle drawn from the same vertex.

8. Shew that the centre of pressure of a plane area immersed in homogeneous liquid at rest is vertically below the centre of gravity of the superincumbent liquid.

Hence, or otherwise, find the centre of pressure on a triangle having one of its sides in the surface of the liquid.

9. Describe the principal applications of the Hydrostatic Balance to the finding of the specific gravities of substances.

GILLIES SCHOLARSHIP EXAMINATION.

If a common hydrometer weigh 3 ounces, what should be the distances between the graduations 1, 1·1, 1·2, and so on, when the diameter of the stem is one-eighth of an inch.

10. Describe clearly the theory of the siphon.

The section of a barometer tube is 1 sq. inch in area and dips into mercury whose horizontal surface is 6 sq. inches; the pressure of the atmosphere is 30 inches; if the tube contains a mass of air which would occupy a cubic centimetre at this pressure, what is the actual height of the column of mercury, and how far would it fall if the atmospheric pressure fell to 29 inches.